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THESIS

CONTINGENCY CONTRACTING AND THE IT MANAGER: TODAY'S CHALLENGES AND FUTURE IMPLICATIONS

by

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March 2009

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This qualitative case study examines the relationship between Information Technology management and contractor management within the context of the Iraq and Afghanistan contingencies. The case study presents a historical context of United States defense contracting along with another to illustrate the chronological advances made in Information Technology management. Finally, the case study presents a description of the defense contingency along with a multiple source characterization of contingency contracting.

The case study collects data to support research using the survey technique of individual interviews with subjects possessing on hand experience dealing with contracted personnel providing Information Technology services throughout the Iraq and Afghanistan contingencies. The case study analyzes data utilizing the pattern matching methodology to determine the level of efficiency and effectiveness of the management of contractor personnel when performed by Information Technology managers. After determining whether performance was effective or efficient, the case study identifies factors that act as levers to either improve or deter effective contract management of Information Technology managers. Finally, the case study makes recommendations for future research topics affecting the levers presented.

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CONTINGENCY CONTRACTING AND THE IT MANAGER: TODAY'S CHALLENGES AND FUTURE IMPLICATIONS

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Submitted in partial fulfillment of the
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Derek Randall:

First, I would like to thank my God for putting me in the position to be able to earn a Master's Degree in the first place. Without Him, nothing in this world would be possible.

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Charles Seaberry:

I would like to take this opportunity to thank all of my mentors that support my everyday efforts in becoming a better father, student, soldier, and servant to the Lord. Through God, all things are possible and for that reason, I have been blessed in my endeavors throughout my life. I feel that as a part of my destiny, I have ended up as a student at the Naval Postgraduate School. This opportunity has allowed me to take full advantage of national and international networking that I expect to benefit me throughout my military career. In addition to networking opportunities, I have gained a valuable education from some of the world's most talented and interesting professors. I vow to put the knowledge given to me into immediate use as I anticipate it will help develop me as a professional soldier. I owe a deep debt to our thesis advisors. They have worked diligently in helping Derek and I perfect the quality of work presented in our thesis. Thanks!

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I. INTRODUCTION

A. MOTIVATION

This case study qualitatively assesses the role of the Information Technology manager. Next, the case study qualitatively assesses how the IT manager relates to civil-military defense contractors in declared and undeclared military contingencies. Specifically, this thesis examines the contingency that is currently ongoing in Iraq and the role played by Information Technology managers of various backgrounds and skill sets throughout contingency operations, and attempts to find commonalities between the contingency contract manager and the Information Technology manager. Further, the case study compares successes and difficulties of the contingency contracting manager to those of the Information Technology manager. The case study then qualitatively assesses the implications of these challenges in order to determine the effectiveness and efficiency of management efforts, which leads to factors that affect the efficiency

B. BACKGROUND

The increased use of the defense-contracting establishments throughout current military operations in general has placed an increased emphasis on the role of the contract manager.[1] Specifically, in contingency operations, such as the current Iraq contingency, an increased emphasis on the role of the contract manager in ensuring the effectiveness of the various contractors regarding the execution of services stated in various contracts is key.[2] When placed in the context of Information Technology, the contract management role in many cases falls on the shoulders of the personnel responsible for prosecuting the Information Technology effort. The recent blossoming of information warfare, combined with information operations and Information Technology, has created a need to establish quick, immediately formed networks and information weapons and defenses on the

[1] Commission on Army Acquisition and Contract Administration, 2007.

[2] Ibid.

battlefield.[3] It has also demanded that the Information Technology manager be able to effectively prosecute operations within the assigned mission area without unnecessary distraction.[4]

The beginning of this case study attempts to illustrate a brief history of defense contracting, followed by another brief history of the defense contingency, and another detailing the history of Information Technology. Next, the case study presents an overview of a similar assessment of defense contract management conducted by the U.S. Army in order to validate the importance of this research and to show similar research efforts. The history also places this case study in a context that examines the necessity of the role of the defense contractor specifically in the delivery of information and communication systems and services. Finally, this case study examines the effectiveness of past contract management efforts by the United States Army, and examines the recommendations made by an independent commission led by Dr. Jacques Gansler.[5]

This case study specifically illustrates the contracts whose scope necessitated contract management by the war fighter on the ground and looks at what specifically was effective and efficient through qualitative assessment.

Effective mission accomplishment is vital in the field, particularly for IT managers. It becomes necessary for IT managers to understand the tools available and necessary. This case study places those tools into the context of contingency operations.

C. AREA OF RESEARCH

This case study examines the role of the Information Technology manager during the contingencies in Iraq regarding the task of Information Technology service contract management. In addition, this case study examines the role of the defense contractor in

[3] David S. Alberts, Richard E. Hayes, Department of Defense Command and Control Research Program, 2003.

[4] Ibid.

[5] Commission on Army Acquisition and Contract Administration, 2007.

providing these services within a contingency environment. The Global War on Terror and, specifically, the Iraq and Afghanistan conflicts necessitate this topic of study.[6]

This case study will attempt to serve as a brief historical context of defense contracts, contracting, contingency contracting, and Information Technology service contracting in order to create understanding regarding the importance and significance of the process. This case study will also serve as an analysis of the effectiveness and efficiency of the contract management efforts of the IT manager throughout the Iraq conflict in order to present factors which, when changed, may serve as ways to improve the process.

Finally, this case study will attempt to offer recommendations for future research or future actions on the part of Information Technology managers regarding their actions as contract manager when necessitated by the efforts on the ground.

In the end, this case study will serve as a framework for the Information Technology manager.

D. RESEARCH QUESTIONS

- How effective and efficient were the efforts of defense contractors in delivering Information Technology assets to the war fighter during the build up phase of military operations during the Iraq contingency?
- How effective and efficient were the efforts of the Information Technology manager in performing the role of the contract manager when necessitated by resources on the ground during the Iraq contingency?
- What factors affected the effectiveness of Information Technology managers operating in a contingency environment when assigned defense contractors to provide services needed for mission accomplishment?
- What factors affected the efficiency of Information Technology managers operating in a contingency environment when assigned defense contractors to provide services needed for mission accomplishment?

[6] Commission on Army Acquisition and Contract Administration, 2007.

E. SCOPE OF THESIS

The scope of this case study is limited specifically to a qualitative assessment of Information Technology managers, defense contractors, and their relationship throughout the Iraq contingency. More specifically, this case study will not provide a quantitative assessment of the Iraq contingency but provides merely a qualitative assessment and to find factors that may contribute to mission effectiveness. Finally, this case study makes recommendations to effectively leverage the determined factors.

F. RESEARCH METHOD

To address the research questions above, the case study methodology as communicated in Dr. Robert Yin in *Case Study Research: Design and Methods* will serve as a framework for a qualitative assessment of Information Technology managers who have served in the Iraq contingency, and their performance as contract managers in a contingency status. The case study utilizes the face-to-face interview tactic of data collection for this assessment.[7]

After data collection, the case study analyzes the results utilizing the pattern matching methodology communicated in *Case Study Research: Design and Methods* to find factors that affect efficiency and effectiveness of contractor management efforts.[8]

Using the Case Study Analysis method described in detail by Dr. Robert Yin in *Case Study Research: Design and Methods*, this thesis will then attempt to show how these factors, when demonstrated, constitute a trend which can be illustrated to have been elucidated as factors which can either increase or decrease effectiveness or efficiency in a Information Technology contingency environment.[9]

G. BENEFITS OF STUDY

The benefits of this case study are many and varied. This case study illuminates the role of the Information Technology manager in contracting operations and places the

[7] Robert Yin, 2008.

[8] Ibid.

[9] Ibid.

topic of service contract management into the forefront of critical discussion. This case study will provide factors that can affect the effectiveness and efficiency of contract management efforts. The case study recommends further in depth study utilizing regression analysis over time, trend analysis, or through more qualitative study.

This case study illuminates the role of Information Technology in contracting operations. This case study will likely serve as a framework for future work in terms of developing IT solutions for the contract manager. This case study will also provide different factors that contribute to efficiency and effectiveness of contracting efforts within contingency environments. More in depth analysis of these factors utilizing regression analysis over time is possible, as is further study utilizing trend analysis. In the end, this thesis becomes a source for ideas for many different future avenues of research contributing to data collection, management, and organization of contracting data for the Information Technology manager.

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II. HISTORY

A. THE ORIGINS OF DEFENSE CONTRACTING

Federal Acquisition Regulations define contracting as

> . . [the] purchasing, renting, leasing, or otherwise obtaining supplies or services [for the Federal Government] from nonfederal sources. (Administrator, Office of Federal Procurement Policy, Office of Management and Budget, 2005)

Taking this definition into its most literal context, it would seem obvious that contracting as an informal practice has taken place since the beginnings of our government. Certainly, a nation founded on the principles of ". . .of the people, for the people, by the people" would need to have some type of goods to own; and it would also seem obvious that the nation would have to get these goods from the same people for which it was formed to serve. The concept of ownership itself dictates the need for some type of contracting in accordance with the definition as stated in the FAR. Certainly, in order to maintain some type of organization to regulate the process of the lending and transaction of goods, there must be a clear understanding of the nature of the responsibilities and consequences that the ownership of goods entails. It then becomes obvious that one of the first actions of the nation would be to dictate the terms through which the federal government could borrow and transact with its citizens.

As an organized and regulated practice, contracting has been in place since the beginning of the existence of the United States as a nation.[10] Defense Intelligence Agency historian, Janet McDonnell, describes the origins of defense contracting by stating that the practice of defense contracting began with the father of our nation, President George Washington, naming Major General Thomas Mifflin the first Quartermaster General to the Continental Army.

[10] Janet McDonnell, Defense Contract Management Agency, 2000.

Figure 1. Major General Thomas Mifflin (From: Wright, Robert K; MacGregor, Morris J.; Center of Military History, United States Army, 1987)

In doing so, President Washington was setting a precedent that the military, and later, the federal government, would place a premium on the services of the defense industrial apparatus. The role of the Quartermaster General at the time was primarily to be concerned with the procurement of goods and services for solely the military and the naval forces.[11] In turn, this would assist in the forming of the logistical apparatus that would support the fledgling government's armed forces and to consolidate the resources available to the Army and the Navy based on the United States' geographic position in the New World.[12] The first Quartermaster General was more concerned with the development of the processes by which the Army would maximize the utilization of the many and varied natural resources that were available in the United States vice having to rely on finished goods that came from Europe.[13]

Figure 2. Original branch insignia of the U.S. Army Quartermaster Corps (From: U.S. Army Quartermaster Museum, U.S. Army Quartermaster Foundation, Inc.)

[11] Kenneth Mayer, 1991.

[12] Ibid.

[13] Ibid.

It would not be until later, when Quartermaster Generals, such as the legendary Nathaniel Greene, appropriately maximized the resources developed by predecessor Quartermaster Generals in order to optimize the task of contracting into a refined and finished art.[14] After Greene, Quartermasters would utilize their innate shrewdness and resourcefulness to find ways to procure items to support the U.S. Army's various efforts both in war and in peace.[15]

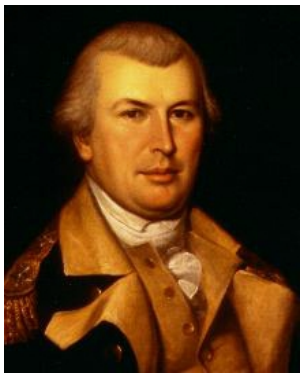

Figure 3. General Nathaniel Greene, U.S. Army Quartermaster General (From: The Glorious Cause of American Independence)

The first federal law regulating the procurement efforts of the government would come later in 1792, when Congress would authorize the Department of the Treasury under Alexander Hamilton to make all purchases for the predecessor of today's Department of Defense, the then Department of War. This action would take the purse of the goods and services that were necessary for the defense of the nation from the hands of the Secretary of War and his proxy the Quartermaster General, and place it in the hands of the Treasury Department. The Quartermaster General went from an executive role in which he was able to be the final authority on what goods and services were to be purchased, leased, and/or rented on behalf of the execution of the duties of the service member to a primarily advisory role.[16] In order to obtain goods deemed necessary in order to accomplish the mission, the defense apparatus had to seek the approval of the

[14] Janet McDonnell, Defense Contract Management Agency, 2000.

[15] Ibid.

[16] Ibid.

Department of the Treasury, which would then in turn sign the bottom line of any invoice, bill of goods, or contract between the Federal Government and any outside agency.[17]

Thus, the role of the modern day contracting officer was born. The creation of the Office of the Commissary General as a subsidiary of the Department of War in 1812 would later provide the contracting officer with a staff and personnel with whom the role of contract administration could more precisely work.[18] The presentation of subordinates and assistants into the then fledgling defense contracting apparatus enabled more bureaucratic elements of organizations to take root, in that the art of contracting was able to become more maturely developed into one which consisted of apprentices and tutors, who could engage in an exchange of information regarding the profession of defense contracting. The creation of the Quartermaster Department as a subordinate to the office of Commissary General would later increase the logistical capabilities of the contracting officers assigned to the Quartermaster General and provide a capable check and balance for the Quartermaster General from within the Treasury department.[19]

These seeds of the modern day contracting process can be seen to have bore fruit today. Congress, who now holds the purse strings of the funds, which the defense apparatus utilizes in order to effectively prosecute the contracting effort, maintains an oversight role in the determination of the amount of money that the Defense Department is able to utilize for the procurement of goods and services.[20] In times of both war and peace, the Congress is the authority from which the military apparatus takes cues from in terms of purchases and financial transactions.[21]

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[17] Janet McDonnell, Defense Contract Management Agency, 2000.

[18] Ibid.

[19] Ibid.

[20] U.S. Constitution.net, 1997.

[21] Ibid.

B. CONTINGENCY CONTRACTING

However, in some emergency instances, the President is authorized in the nation's defense to let the military obtain goods and services with little or no oversight.[22] [23]

1. The Origins of Defense Contingencies

The definition of a contingency is defined in the Federal Acquisition Regulations as:

> . . a military operation that. . .is designated by the Secretary of Defense as an operation in which members of the armed forces are or may become involved in military actions, operations, or hostilities against an enemy of the United States or against an opposing military force; or. . .results in the call or order to, or retention on, active duty of members of the uniformed services . . .during a war or during a national emergency declared by the President or Congress (Administrator, Office of Federal Procurement Policy, Office of Management and Budget, 2005).

Within this definition lies the impetus for what has become the modern day defense contingency. The major difference between the definition of a contingency and the definition of a war is that per Article I, Section 8 of the United States Constitution, the power to declare war and commit troops to a military operation resides solely with the legislative branch of the Federal government and not the Executive branch.[24] The War Powers Resolution of 1973 enforces this belief, stating that the Congress must explicitly give the President the authority to send military personnel into action abroad unless the United States is under attack or serious threat.[25]

Since military operations need to be funded and paid for, and the funds for military operations are authorized through a congressional approval process for declarations of war and for operations that fall under the War Powers Resolution, it becomes necessary for the military and defense establishment to find a way to subsidize

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[22] Cornell University Law School, 2000.

[23] Administrator, Office of Federal Procurement Policy, Office of Management and Budget, 2005.

[24] U.S. Constitution.net, 1997.

[25] Cornell University Law School, 2000.

operations for military contingencies.[26] In a vacuum, each service would spend money allocated through the yearly congressional budget; however, in order to attain maximum effectiveness on certain tasks, the military is more inclined to contract out services in many different instances for military contingencies. Thus demonstrates the necessity of contingency contracting.[27]

As the nature of warfare has changed over the last 100 years, from the beginnings of contingency contracting during the infancy of the United States, through the pre-industrial Civil War period, the post Civil War industrial complex and now into the information age, the nature of contracting has changed as well.[28] Goods, supplies, and labor are contracted outside the federal government in conjunction with technology, training, and support for Information Technology systems.

C. INFORMATION TECHNOLOGY

An understanding of the nature of Information Technology is necessary to fully comprehend the impact of Information Technology on the defense industry. Specifically, examination of the factors that are necessary in order to maintain the levels of competence and the levels of expertise that are necessary to effectively prosecute military operations is needed in order to see the full impact of contracting on Information Technology.

1. The Origins of Information Technology

Defining the term "Information Technology" is a task easier said than done. Each military service has a different regulation that provides a different definition for Information Technology.[29] More surprisingly, the definition of Information Technology as written in the Defense Federal Acquisition Regulations differs from the definition of Information Technology as communicated in the Federal Acquisition Regulations.[30] One

[26] Cornell University Law School, 2000.

[27] Gordon Adams, Council on Economic Priorities, 1989.

[28] Kenneth Mayer, 1991.

[29] Information Technology Association of America, 2008.

[30] Ibid.

would assume that the term would be defined in Joint Publication 1-02, but the term Information Technology, while mentioned over 10 times in the document, is not defined anywhere specifically in the publication.[31] Thus, similar to the contracting process, in order to find the appropriate origins of Information Technology, one must look to the private sector.

Figure 4. Information Technology Association of America logo (From: Information Technology Association of America)

The most robust and overarching definition of the term Information Technology is provided by the Information Technology Association of America. Per the Information Technology Association of America, Information Technology is defined as:

> [. . . the] study, design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware. Encompassing the computer and information systems industries, Information Technology is the capability to electronically input, process, store, output, transmits, and receive data and information, including text, graphics, sound, and video, as well as the ability to control machines of all kinds electronically. Information Technology implies the use of data assets, new found computer systems and networks, and analysis methods to harness the ability of the user to effectively manage information (Information Technology Association of America, 2008).

It becomes then necessary for the user of the term "Information Technology" to understand the context in which the term is being used, since the term is so overarching in its breadth.

[31] Joint Staff, 2001.

The Department of Defense Directive 8000.1, entitled “the Department of Defense Chief Information Officer’s Desk Reference Volume I” defines the term Information Technology as being,

> Any equipment or interconnected system or subsystem of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission or reception of data or information by the DoD Component. For purposes of the preceding sentence, equipment is used by a DoD Component if the equipment is used by the DoD Component directly or is used by a contractor under a contract with the DoD Component that (i) requires the use of such equipment, or (ii) requires the use, to a significant extent, of such equipment in the performance of a service or the furnishing of a product. The term "Information Technology" includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services), and related resources. Notwithstanding the above, the term "Information Technology" does not include any equipment that is acquired by a Federal contractor incidental to a Federal contract. IT includes systems that are to be used for routine administrative and business applications (including payroll, finance, logistics, and personnel management applications). (Information Technology Association of America, 2008)

While this definition of Information Technology is primarily and solely in a defense acquisition context, the relatively new nature of the definition is because there is a necessity to provide some standardization to the term, rather than simply allowing different organizations to use legacy definitions for what is commonly accepted as “Information Technology.” Even the position of Chief Information Officer is relatively new to the Department of Defense, particularly when compared to the relative age of the defense contracting structure, which began with the Quartermaster General.

While the term “Information Technology” can be defined in many different contexts, what remains the same over the various different mediums in which Information Technology exists are two major components that comprise the fundamental basis of modern day Information Technology: the computer and some type of communications technology.[3233] In a sense though, an argument can be made that

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[32] David S. Alberts, Berndt Brehmer; Reiner Huber; Viggo Lemche; James Moffat; Mark Nissen; Ross Pigeau; Mink Spaans; Joseph R. Lewis; Department of Defense Command and Control Research Program, 2007.

[33] David S. Alberts, John J. Garstka, Frederick P. Stein, Department of Defense Command and Control Research Program, 2005.

Information Technology existed long before the first computer based primarily on the fact that there has always been a need to manage information.[34]

The need to communicate and manage the communications process has existed since the ability to comprehend information has existed.[35] Ever since people have been able to speak and write, and have needed to retain what has been spoken and written, human beings have had a need to effectively manage the information that needed to be retained.[36] However, with the creation of the computer came the ability to professionally educate and train people in the art of Information Technology. The computer gave humanity the ability to create effective tools that support efforts in retention, management, and the transfer of information.[37] Primarily, tactile objects such as computer disks or tapes were used to transfer information from one computer to the next. However, the ability to transfer information over telephone lines became possible once the ability to modulate and demodulate information became possible using modems. Once the use of the modem became mainstream, the need for Information Technology managers became more and more prevalent because information was being sent from a number of different individuals to any number of other people.[38]

The rise of the internet made the need for Information Technology managers more pressing because the internet connected the world with each other, making the world smaller and easier to navigate.[39] The knowledge and ability to utilize Information Technology assets became more and more widespread during this time because Information Technology assets became more and more accessible to the common user.[40] The level of knowledge necessary to operate information systems and technology became lower as systems became more user-friendly.[41]

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[34] Martin Van Creveld, 1985.

[35] Ibid.

[36] Ibid.

[37] Rick Hayes-Roth, 2003-2006.

[38] John Arquilla, David Ronfeldt, National Defense Research Institute, 1997.

[39] Rick Hayes-Roth, 2003-2006.

[40] Rick Hayes-Roth, 2003-2006.

[41] Ibid.

With the transference of data becoming more and more prevalent, the need for data managers became more and more dire. Thus, the need for Information Technology practitioners and data administrators became more obvious. Another occurrence that became more widespread as data became more and more communicable was the fact that the worth of the data being communicated increased, necessitating higher and higher security protocols for information.[42]

These factors combined: the accessibility of data, the increase in the worth of data, and the necessity for higher security protocols for data, all contributed to the need for the standardization of the profession of the Information Technology manager to harness the transference and administration of data and information, both within the private sector and within the government, particularly the Department of Defense.[43]

Today, within the Department of Defense, Information Technology plays a vital role in the coordination and prosecution of all of the military's various missions. Virtually all of the computerized weapons systems consist of either hardware that contains a facet of data or information or software that is constructed from many different lines of source code. The major issues concerning Information Technology within the military forces today have to deal less with the emergence of Information Technology but more with finding new ways to make all of the various different information systems communicate with one another.[44] This search for interoperability and standardization across all of the armed forces promises to usher in a new period for Information Technology within the United States' defense structure.

2. The Role of the Information Technology Manager

As previously stated, the emergence of Information Technology as a professional discipline has demanded the training and the development of individuals to manage the

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[42] Rick Hayes-Roth, 2003-2006.

[43] David S. Alberts, John J. Garstka,Frederick P. Stein, Department of Defense Command and Control Research Program, 2005.

[44] David S. Alberts, Berndt Brehmer; Reiner Huber; Viggo Lemche; James Moffat; Mark Nissen; Ross Pigeau; Mink Spaans; Joseph R. Lewis; Department of Defense Command and Control Research Program, 2007.

data and information of new technologies. Thus, the Information Technology manager in various different incarnations is created. Information Technology managers go by many different designations within the Department of Defense and fulfill many different roles. A discussion of some of the roles of Information Technology managers is necessary to understand the context of their mission.

One of the most important roles that an Information Technology manager can play within a military unit is that of the Communications Officer.[45] In the context of the Navy and onboard ships, the Communications Officer is, amongst other things, responsible for:

> . . [the] receipt, transmission, and internal distribution of all visual and electronic messages. Handling responsibilities begin with the receipt of an incoming message or computer diskette, or upon the delivery of an originator's draft outgoing message to the Communications Department/Center. (Department of the Navy, Office of the Chief of Naval Operations, 2005)

The basic definition of a Communications Officer implies that the person with whom this role is assigned is responsible for ensuring that all of the messages transmitted to and from a ship are effective and efficient.[46] Throughout the various different positions of responsibility in the Navy, there are few other roles as important as this one to the prosecution of the ship's mission.

Another major role, which Information Technology managers can play within military units, has to deal with ensuring appropriate levels of Command and Control (C2) are maintained within the unit.[47] The importance of utilizing Information Technology assets to maintain effective Command and Control has been underscored by the increase in the level of electronic warfare and signals intelligence in the recent years.[48] Information Technology managers maintain certain discriminators in the electronic warfare realm. These include frequency of communications, bandwidth, and wavelength.

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[45] Department of the Navy, Office of the Chief of Naval Operations, 2005.

[46] Ibid.

[47] David S. Alberts, Richard E. Hayes, DoD Command and Control Research Program, 2006.

[48] David S. Alberts, Richard E. Hayes, DoD Command and Control Research Program, 2006.

Information Technology managers also ensure that signals and communications are reaching the appropriate individuals in the field so that the correct orders can be communicated to the commander's subordinates and that the commander maintains an appropriate level of understanding through having the information that he or she needs to know about ongoing operations.[49]

While it would seem rather obvious that effective communications on the battlefield would be a vital part of military operations, most individuals do not necessarily understand the significance of the knowledge of certain individual factors of what is actually occurring on the battlefield to the commander's field of view. In his seminal book *On War*, Karl von Clausewitz writes about a concept he calls the "fog of war," a term that he uses to describe the uncertainty in the commander's decision making process created due to the lack of timely and relevant information and data. (von Clausewitz, 2008) One of the roles of Information Technology managers is to act as the agent responsible for maintaining the timeliness and the accuracy of the information that the commander is to receive.

[49] David S. Alberts, Berndt Brehmer; Reiner Huber; Viggo Lemche; James Moffat; Mark Nissen; Ross Pigeau; Mink Spaans; Joseph R. Lewis; Department of Defense Command and Control Research Program, 2007.

Figure 5. Carl von Clausewitz (From: Bassford)

In situations that the commander may not be able to have the necessary infrastructure necessary to receive the information desired, the Information Technology manager may become responsible for attaining the information for the commander.[50] Particularly in situations where there is no existing infrastructure with which the Information Technology manager can collect information, tools with which to collect information may have to be manufactured, created, or refurbished in order to accomplish the mission out of necessity. In these cases, the Information Technology manager must act not only as an administrator but also as a service provider.

There are situations that exist on the other side of the spectrum. In certain instances, where there is more infrastructure and more information available than can be effectively processed by existing personnel, one of the roles of the Information Technology manager is to ensure that each of the stakeholders who have a vested interest in the information and data which is communicated are able to access the data effectively. This role is called a knowledge manager.[51] As such, a knowledge manager is responsible

[50] Martin Van Creveld, 1985.

[51] David S. Alberts, John J. Garstka, Frederick P. Stein, Department of Defense Command and Control Research Program, 2005.

for ensuring that there is an effective flow of communication between individuals and agencies that need the information. This role is important for Information Technology managers in that they act as enablers not through the effective management of information that exists, but rather through the management of the ability of entities to communicate with one another.

While Information Technology managers can act as enablers of information collection, infrastructure of information, collection, and information flow, they can also act as enablers of the technology aspect of Information Technology.[52] It is the responsibility of every Information Technology manager to have a working knowledge of the technical aspects of the information technologies that falls under their purview. More often than not, the Information Technology manager is not the technical expert; rather, the technician is one of the subordinates that report to the Information Technology manager. Nevertheless, there are situations in which the Information Technology manager may not have the resources necessary in terms of personnel who may or may not be as technically proficient as others. In cases such as these, it is the responsibility of the Information Technology manager to act as the 'go-to' individual regarding the effectiveness of Information Technology aspects of the mission.

The Information Technology manager is also the individual responsible for advising the commander of their unit regarding what technologies may be needed to maintain an effective level of information and technical superiority over the enemy or competitor.[53] Information superiority is important, particularly in the context of the Information Technology manager because the most advantageous position of Information Technology management is attained once there is a level of control over the information available to competitors. Technology superiority is important because the Information Technology manager can more effectively and efficiently manage the information available to them if they possess the best available technology.

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[52] David S. Alberts, Richard E. Hayes, Department of Defense Command and Control Research Program, 2003.

[53] Ibid.

While information superiority and technical superiority is important for the Information Technology manager in terms of dealing with the information presented to them, the best Information Technology manager understands how to effectively utilize the information available to them to effectively influence the competition. Conducting operations with information may not fall under the purview of the Information Technology manager, but the Information Technology manager may operate in a support function for the personnel responsible for conducting operations utilizing the data or information.

The Information Technology manager is also responsible for identifying and harnessing any technology that may be available in the civilian marketplace that might be utilized to more effectively conduct their duties.[54] More often than not, the commercial sector will offer levels of technology that may be competitive or even superior to that provided by the military or public sector. In these cases, it is the responsibility of the Information Technology manager to find and to secure usage of the technologies necessary to maintain the highest levels of effectiveness and efficiency regarding mission accomplishment.

To accomplish all of these roles, the Information Technology manager needs a large amount of support and services from various different agencies.[55] Specifically, the Information Technology manager must always have access to a power source in order to provide electricity to the technologies that are used to accomplish their mission. The Information Technology manager must also have access to certain frequencies or bandwidth in order to effectively transmit data from one point to another. And in cases where the Information Technology manager needs to create their own infrastructure with which to communicate, and the personnel available to the Information Technology manager may not be as plentiful as one would wish, the Information Technology manager must find a way to have access to labor. Finally, the Information Technology manager

[54] David S. Alberts, John J. Garstka, Frederick P. Stein, Department of Defense Command and Control Research Program, 2005.

[55] Ibid.

needs to have a way to store the data in a secure and accessible location such that the data is either not at risk of destruction or that the risk is sufficiently mitigated.

In the incidences where the military does not have the resources readily available to provide to the Information Technology manager, it sometimes becomes more effective to outsource or to contract for the needed services through the private sector. Particularly, in incidences where the Information Technology manager is called upon to satisfy an urgent need due to contingency operations, the usage of the contingency contracting apparatus becomes vital to the success of the Information Technology manager.

D. CONTINGENCY CONTRACTING FOR INFORMATION TECHNOLOGY

The Information Technology manager must utilize the defense contracting apparatus when resources are not available. Such resources may be personnel, energy, labor, bandwidth, frequency, storage capacity and/or many others. In these instances, the Information Technology manager must utilize contracting to attain these materials and/or support. Situations such as these present circumstances in which the Information Technology manager may have to deal with issues that may or may not come up during normal operations, particularly circumstances in which the Information Technology manager is required to provide Information Technology assets throughout contingency operations.

1. Necessary Resources

The most vital resource that the Information Technology manager needs in order to effectively accomplish their mission is time.[56] However, in certain situations, time is not available for Information Technology managers to accomplish their tasks. Particularly in situations such as contingency operations, the factor of time is one that is less and less available. For effective management of information systems, the Information Technology manager must be able to have the time necessary not only to set

[56] David S. Alberts, Richard E. Hayes, Department of Defense Command and Control Research Program, 2003.

up the supporting backbone of operations, but to effectively test the appropriate security protocols and to ensure that the network operates in an efficient manner. For each of these tasks, time is key.

Another resource the Information Technology manager could contract out is the simple tactile tools with which to build the backbone of communications. Most Information Technology managers do not carry the components to create access points or the components necessary to serve as data storage for large, secure networks, most materials in general in bulk because it is not cost effective to do so.[57] Ready spare parts are a commodity that most Information Technology managers do not have access to, particularly in contingency situations. Thus, the procurement of parts through the contracting arena makes sense for Information Technology managers from a rational and from a business standpoint.

The most common, and perhaps the most relevant commodity that the Information Technology manager can outsource for is technical support.[58] The Information Technology manager is responsible for being the subject matter expert on information systems for the warfighter. However, he or she may not have the time to perform necessary maintenance or repairs to technical equipment due to a number of factors. For example, one may be that there might not be the number of people assigned to the Information Technology manager that he or she would deem adequate for the workload. Another reason that the Information Technology manager might outsource for technical support is that there might be a time constraint the Information Technology manager must operate to accomplish their mission. Whatever the case may be, technical support remains one of the most outsourced resources for Information Technology managers, particularly in contingency situations.

Another resource, which may be contracted, is training. Trained personnel are an asset that Information Technology managers may not have the time or ability to effectively develop during contingency operations. Situations arise in which the mission

[57] David S. Alberts, Richard E. Hayes, Department of Defense Command and Control Research Program, 2003.

[58] Jan Bosch, 2000.

dictates that the Information Technology manager perform tasks which he or she may not be trained for. Situations might also arise which might require the Information Technology manager to utilize his or her equipment in a manner in which may be unorthodox. In these situations, the personnel necessary to train the operators or technicians to use the equipment in the manner dictated by the situation may need to be contracted by the federal government from the private sector.

In some situations, the Information Technology manager may be needed to perform tasks outside of his or her job description. A recent example was the case with the Navy and the Individual Augmentee process, where the personnel were sent to augment ground forces, performing tasks that were not within the realm of their specialties.[5960] In these incidences, the contracting of civilian personnel might be necessary in order to provide a level of continuity that might not be present because the information management personnel are away from the unit performing other tasks.

In other cases, however, the Information Technology manager simply needs to contract out in order to have the necessary infrastructure already present once military personnel have "boots on ground.[61]" In these situations, the contractor might be called upon to build infrastructure for the Information Technology manager to effectively prosecute their duties. This infrastructure can range from a wireless network, or a data management facility, or simply communications facilities, which can be immediately used once the Information Technology manager arrives on station.

In these situations where the Information Technology manager has contractors assigned to them performing tasks as stated in a contractual agreement, there may or may not be contract management personnel or personnel assigned specifically to making sure that the contractor is performing the duties as stated in the contract. In these situations, it becomes important for the Information Technology manager to become privy to what specifically is stated within the contract and what tasks the contractor is responsible for

[59] Sam Pringle, 2008.

[60] Kent Meyer, 2009.

[61] Janet McDonnell, 1996.

performing and/or what end products the contractor is responsible for delivering. In some contingency situations, the number of personnel who work for the Information Technology manager may be less than the number of contracting personnel on the ground, and it may become difficult for the Information Technology manager to effectively perform quality assurance on the contractor. In these cases, effective contract management is key.

It is also vital in situations, which require the use of contractors in contingency operations for there to be effective contract management by the appropriate personnel.[62] It becomes vital that the contractor be given every tool necessary to support the war fighter. In the context of Information Technology management, the need for the contractors to be able to provide the appropriate services is key in that the management of information systems enables so many more abilities and tasks of the war fighter. The contract administrator and/or contract administration agency must provide all that is stated to be provided to the contractor in the contract so that the contractor can deliver the services necessary to the government.

Finally, it becomes vital that the attitude of the contractor in contingency operations be such that the belief is that they are in the field with the military and government agencies to provide support to the military effort. There must be a 'quid pro quo' in terms of the relationship between the contractor and the government agency which they are there to support in that the contractor cannot make themselves a deterrent to military operations in as much as they become an augmentation of the military's effort. Through this symbiotic relationship between the contractor and the government, both entities can effectively and efficiently conduct the duties as assigned.

2. Issues and Challenges

There are some instances when the symbiotic relationship between the contractor and the government does not yield as much success as envisioned in the signing of the contract.[63] In the context of Information Technology management, there can be a

[62] Commission on Army Acquisition and Contract Administration, 2007.

[63] Gregory Garrett, CCH, 2007.

number of reasons for the relationship between the contractor and the government to fail. Some of these reasons can include a failure of the contractor and the Information Technology manager to effectively communicate.[64] This failure of communication can yield confusion on the part of either the government or the contractor or can simply detract from the time available for both the contractor and the Information Technology manager to perform their duties as assigned.

E. URGENT REFORM REQUIRED: ARMY EXPEDITIONARY CONTRACTING (THE GANSLER REPORT)

Because of various contracting and acquisition issues in the Iraq and Afghanistan contingencies, the Secretary of the Army established an independent Commission on Army Acquisition and Contract Management in Expeditionary Operations.[65] A complete review was conducted, which assessed the entire gamut of programs, processes, personnel and training procedures of Army contracting and acquisition as demonstrated during the Iraq and Afghanistan contingencies. The end product was the Report of the Commission of Army Acquisition and Program Management in Expeditionary Operations, a document that was entitled "Urgent Reform Required: Army Expeditionary Contracting," or more commonly referred to as the Gansler Report, after the chairman of the Commission, Dr. Jacques Gansler, former Undersecretary of Defense for Acquisition, Technology and Logistics.

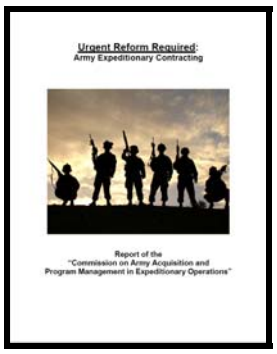

Figure 6. Cover Page of the Gansler Report (From: Commission on Army Acquisition and Contract Administration, 2007)

[64] Gregory Garrett, CCH, 2007.

[65] Commission on Army Acquisition and Contract Administration, 2007.

The Gansler report argues that the U.S. Army has inadequately performed the increased workload, complexity, and tempo of contracting personnel and contracting operations, particularly contingency contracting operations (Commission on Army Acquisition and Contract Administration, 2007). The report argues that while defense budgets were expected to decrease due to the end of the Cold War, military budgets have instead increased due to the increasing amounts of money necessary to maintain active and efficient outsourced work.[66] While the initial costs of outsourcing certain non-combat tasks that support the war fighter were calculated by defense think tanks and other agencies, the long term maintenance and sustainment costs of these services have served to increase the defense budget.[67] The Gansler report goes further to state that the Army has failed to modernize the contracting bureaucracy present within the Army itself to become able to adapt to the changing and burgeoning landscape of contracting and outsourcing by the federal government, military, and more specifically, itself.[68]

The Commission on Army Acquisition and Contract Administration in Expeditionary Operations made seven findings, which found fault in various different aspects of Army contingency contracting and program management (Commission on Army Acquisition and Contract Administration, 2007). Based on the findings of their report, the following recommendations were made for the Army to improve itself long term in the contracting arena:

The first recommendation of the Gansler report was to increase the stature, quantity, and career development of the Army's contracting personnel, military and civilian.[69] The findings of the Gansler report confirmed that the Army as an organization did not possess the adequate number of personnel necessary to effectively conduct contract management within expeditionary operations. Without the necessary number of personnel, the Army cannot effectively ensure that the personnel with whom there is an agreement to provide services for the Army are in fact providing the services as stated in

66 Commission on Army Acquisition and Contract Administration, 2007.

67 Ibid.

68 Ibid.

69 Ibid.

the contractual agreement between the Army and the contractor. Moreover, if the personnel are present but do not possess the stature necessary to effectively exercise authority over the contractors, then there exists no quality assurance, which ensures the contractor's task is accomplished effectively and efficiently.

The second recommendation of the Gansler report was to restructure the organization and restore responsibility to facilitate contracting and contract management in expeditionary and CONUS operations.[70] Situations occurred in which the individual responsible for performing contract management did not understand their role in ensuring the contractor is responsible for performing their tasks as stated in the contract. Other situations occurred in which the contract manager did not understand what tasks and to what level of completion the contractor was supposed to complete the task. In these situations, problems occur in the sense that the contractor escapes culpability for contract fulfillment. Particularly in situations where the individual or agency responsible for managing the contractor is so far removed organizationally from the personnel from the contractor's agency who is actually performing the task, this presents a problem.

The third recommendation of the Gansler report was to provide training and tools for overall contracting activities in expeditionary operations.[71] For effective contracting operations to occur, all of the personnel involved within the operation need to be at the top levels in terms of knowledge, proficiency, and experience. In the context of modern day warfare, most operations consist of some type of technological component that cannot be intuitively understood in terms of how to operate and maintain the equipment. In these situations, the personnel hired to perform certain tasks in terms of servicing the equipment need to be as proficient as the personnel tasked with operating the equipment, if not more so. The training aspect is particularly key in terms of dealing with information technologies that enable individuals to communicate with one another on the battlefield.

[70] Commission on Army Acquisition and Contract Administration, 2007.

[71] Ibid.

The final recommendation of the Gansler report was for the Army to obtain legislative, regulatory and policy assistance to enable contracting effectiveness in expeditionary operations.[72] This recommendation implies that the Army did not possess the appropriate levels of legislative, regulatory and policy assistance to enable contracting effectiveness in expeditionary operations. This also illustrates one of the strengths of the federal government in the defense contracting arena. The advantage that the government has over the contractor is substantial if the ability to change the laws to more adequately benefit the military is a tool that the government has in its disposal. This also illustrates the changing nature of military operations and capabilities in the sense that the laws and policy need to adapt to 'catch up' with technology and innovation.

The implications for the Army are numerous and far reaching. The Gansler report acts as an agent of fundamental change regarding the way outsourcing is administered, performed, and managed in the military services. Long-term effects promise to be felt in the arenas of technology, communication, and innovation in addition to the war fighter's realm. The fundamental change illustrated by the Gansler report can be compared to the fundamental, wide reaching changes in the arena of Information Technology that is also occurring within the military in the sense that both changes have first and second order effects that promise to be felt in all aspects of the military for years to come.

[72] Commission on Army Acquisition and Contract Administration, 2007.

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III. HYPOTHESIS

A. TRANSLATING THE GANSLER REPORT TO INFORMATION TECHNOLOGY MANAGEMENT

The findings of the Gansler report were troubling for the Army. The Commission on Army Acquisition and Contract Administration in Expeditionary Operations determined that the status of contingency contracting (in expeditionary contracting) practiced by the Army were unsatisfactory.[73]

Service contracts earned particular attention. Specifically, the Gansler report makes the argument that the Army cannot effectively manage service contracts in the sense that the ability to effectively manage and quality assure the work of the contracted personnel is lacking in expeditionary, or contingency operations (Commission on Army Acquisition and Contract Administration, 2007). The Gansler report argues that the combat commander has gained military capability from the ability to allocate personnel to the war fighting effort rather than the service support effort.[74] However, in return for the added capability gained, the commander has lost the effective management ability over the procurement and management of needed support services such as food, communications services, Information Technology services, et al.[75] The net result is a deterioration of the war fighting effort on the part of the combat commander.[76]

The problem is endemic and not just contained within the context of service contracts. Regarding resource management, military commanders have lost the ability to effectively understand what is available at any given time (Commission on Army Acquisition and Contract Administration, 2007). If the resources are no longer provided organically but by contracted personnel, and the Army does not possess the ability to effectively manage the contracted personnel, then the Army by proxy loses the ability to effectively manage resources.

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[73] Commission on Army Acquisition and Contract Administration, 2007.

[74] Ibid.

[75] Ibid.

[76] Ibid.

Many of the recommendations made within the Gansler report regarding resource management and overall contractor management focus on individual symptoms of a larger problem. Another of the larger context issues that the Gansler report addresses is that the Army systemically has trained officers for contract management and administration positions in an inadequate manner (Commission on Army Acquisition and Contract Administration, 2007). The Gansler report recommends that the Army reevaluate and reform the preparation process for personnel assigned to contractor positions.[77] Doing so should make the Army better prepared for future contingency or expeditionary operations in the context of contract management.

What implications, then, are there for one of the more vital services provided by contractors in a contingency or expeditionary setting – Information Technology? Does the management of Information Technology contracts follow the same pattern as that of other service contracts in the sense that the management of Information Technology services is inadequate in a contingency setting?

Based on the report made by the Commission on Army Acquisition and Contract Administration in Expeditionary Operations, the answer would seem to be that the management of Information Technology contracts would be poor as well (Commission on Army Acquisition and Contract Administration, 2007). Nevertheless, if we hypothesize that the management of Information Technology service contracts is poor in a contingency environment, more information is necessary to find an adequate answer.

It would make sense to speculate that the management of contractor personnel by Information Technology managers would demonstrate many of the same symptoms as the management of contractor personnel by the Army personnel. An examination of further issues and concerns that to describe the contracting process concerning Information Technology is necessary in order elucidate the understanding of the issue.

[77] Commission on Army Acquisition and Contract Administration, 2007.

B. HYPOTHESIS TESTING

If we characterize the management of contracted personnel within Iraq and Afghanistan as poor, then perhaps an examination of the involvement of the contractor in the process is necessary in order to understand the relationship. Communication is a two way process, and if there were issues in terms of communicating the mission between the contract manager and the contracted personnel, then perhaps the communication between the two parties was flawed. A failure to communicate between the two parties would act as a symptom of contract management issues.[78]

In the case of Information Technology management, an arena in which tactile, technical engineering and manufacturing on a small scale is combined with theoretical, systems approach thinking, the need to communicate effectively is not only important --, it is vital to mission success. Issues with communication when dealing with contractors in an Information Technology context would severely hamper the warfighter's mission.

In order to test the validity of the hypothesis that the relationship between contractors and Information Technology managers was strained in the sense that the Information Technology managers could not effectively manage the contracted personnel, certain questions must be asked to conclude whether the hypothesis is correct or not.

C. RESEARCH QUESTIONS

In order to effectively find the nature of the relationship between Information Technology contract managers and the contracted personnel providing services, the questions asked must be robust enough in order to address the issue appropriately. While the questions asked can demand a qualitative response, they must also provide a rubric or a standard from which to judge contractor performance.[79]

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[78] Gregory A. Garrett, CCH, 2007.

[79] Bordens & Abbott, 2004.

Research Question 1:

- How effective and efficient were the efforts of defense contractors in delivering Information Technology assets to the war fighter during the build up phase of military operations during the contingencies in Iraq and Afghanistan?

Research question one addresses the capability of the contracted personnel concerning the delivery of needed services to the war fighter. The response to this research question will give a good sense regarding whether or not the relationship between Information Technology managers was as effective and efficient as it should have been with the contractor personnel.

Research Question 2:

- How effective and efficient were the efforts of the Information Technology manager in performing the role of the contract manager when necessitated by resources on the ground during the contingencies in Iraq and Afghanistan?

Research question two looks to illuminate whether the Information Technology manager was capable in his efforts to provide support for the contractor personnel in performing their tasks. If the relationship between the Information Technology manager and the contractor was strained in terms of mission accomplishment, not the entire fault needs lie on the shoulders of the contractor. Understanding the level of attention given to the contractor by the Information Technology manager will give a good sense of the relationship between Information Technology management and contract management in the contingency environment.

Given an understanding of the relationship between the contractor and the Information Technology manager in terms of effectiveness and efficiency, we can then look to reasons for success or failure.

Research Question 3:

- What factors affected the effectiveness of Information Technology managers operating in a contingency environment when assigned defense contractors to provide services needed for mission accomplishment?

The strength of the face to face interview technique of the survey methodology lies in the fact that the person interviewed, if credible, can offer up their own recommendation based on experience as to why the situation between contractor personnel and Information Technology management personnel was either an effective relationship or an ineffective one. An effective relationship is characterized by one in which mission accomplishment was attained regularly while an ineffective relationship is one in which mission accomplishment was hampered.

Research Question 4:

- What factors affected the efficiency of Information Technology managers operating in a contingency environment when assigned defense contractors to provide services needed for mission accomplishment?

Judging the efficiency of Information Technology managers in terms of accomplishing contract management in a contingency or expeditionary environment is difficult in the sense that the word efficiency carries with it the connotation that a metric is involved within its calculation. Quantitatively, efficiency is a rate.[80] However, since this case study is performing a qualitative assessment, the methodology in determining the efficiency of the Information Technology manager is through the interview technique of the survey methodology.[81] Relying on the subjective assessment of the subject interviewed is an adequate assessment tool as the subjects are considered subject matter experts.[82]

[80] Bordens & Abbott, 2004.

[81] Robert Yin, 2008.

[82] Ibid.

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IV. METHODOLOGY

A. CASE STUDY METHODOLOGY

The methodology used to explore the hypotheses is the case study methodology as detailed in Dr. Robert K. Yin's book entitled *Case Study Research: Design and Methods: Fourth Edition.*

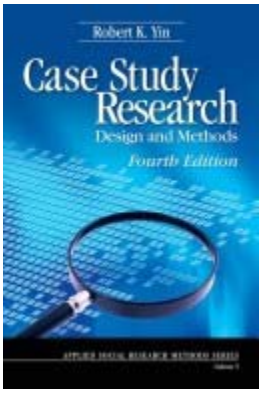

Figure 7. Case Study Research: Design and Methods (Fourth Edition) by Dr. Robert K. Yin (From: Yin, 2008)

1. The Case Study as a Research Method

Dr. Yin states in his book regarding case studies that the case study is the generally preferred method of research when, as he states, "how" or "why" questions are being posed, the investigator has little control over events, and the focus is on a contemporary phenomenon within a real life context (Yin, 2008). He argues that case studies are more effective when there are multiple sources of evidence with data that converges in a triangulated fashion.[83]

The research questions posed within this case study satisfy the requirement as being "how" or "why" questions in that they seek to understand specifically how effective and how efficient contingency contracting operations are in the specific context of Information Technology throughout the Iraq contingency.[84]

[83] Robert Yin, 2008.

[84] Ibid.

The investigator in the context of this case study has no control over the events that have already occurred. The method of research and the interview method merely chronicle events that have already occurred and cannot be changed (Yin, 2008). The research subjects have volunteered to contribute to the thesis research and have not been coerced or incentivized to participate in the interviews.

The focus of the case study is a contemporary phenomenon in a real life context in that they examine specifically contingency contracting operations within the context of an actual military contingency that is currently occurring within Iraq.

Finally, multiple sources of data were attained in that three different interviewees have contributed to thesis research. Their data converges through their common experiences in the same real world contingency situation.

2. Effective Research Design

Dr. Yin argues that the research design, or the logical sequence that connects the empirical data to the initial research questions and ultimately, the conclusions, is the most effective when each of the five major components are strongest (Yin, 2008). These components, he articulates, are the study's questions, its propositions (if any,) the unit or units of analysis, the logic linking the data to the propositions, and the criteria for the interpretation of the findings.[85]

The research questions of this case study are clearly articulated in many different sections of this case study, including the introduction and the hypothesis.

This case study proposes to illustrate some specific factors, which can affect the efficiency and effectiveness of the management of contracts within a contingency situation. In addition, this study proposes to illustrate areas of future exploration within the same area of research.

The unit of analysis in this case study is the individual interview. The tool of research used to attain information for the case study is the interview. All of the research data is included within the interview section of the case study.

[85] Robert Yin, 2008.

The logic linking the data as attained through interviews with personnel who have participated in contingency operations that involved the management of contractors, within the context of Information Technology, to the proposition of illustrating factors that contribute to effectiveness and efficiency within contingency contract management in the context of Information Technology, is that the personnel interviewed possess the appropriate knowledge of the subject matter, based on education and experience, to effectively judge what is effective and efficient regarding the management of contractors within the context of Information Technology.

Finally, the criteria for interpreting the findings of the case study are the matching of patterns based on experiences throughout contingency operations.

3. Four Tests of Judging Quality of Design

If the purpose of the research design is to illustrate the logical progression of the case study from the data to the research questions to the conclusions, then the quality of the research design can be judged based on how sound the logic of the progression of thought is within the study (Yin, 2008). Dr. Yin presents four tests that judge the quality of the logic of case study research.[86] These four tests examine the construct validity, the internal validity, the external validity, and the reliability of the research design.[87]

The first, and most challenging test of judging the quality of the logic of case study research, is the test for construct validity (Yin, 2008). To satisfy the requirement for construct validity, the investigator must define the metric by which the research question attempts to judge the case in terms of specific concepts (Yin, 2008). Further, the investigator must identify operational measures that match the concepts, a task that can be performed through citing published studies that make the same matches (Yin, 2008).

Construct validity is demonstrated within this case study through the use of multiple sources of evidence (interviews of multiple sources,) an establishment of a chain of evidence (through the content of the interviews,) and the review of the draft case study

[86] Robert Yin, 2008.

[87] Ibid.

report by key informants (thesis advisors.) The metrics used to judge efficiency and effectiveness of Information Technology contract management within contingencies are defined through the identification of factors, which contribute to the same. Finally, the citation of the Gansler report enables the identification of operational measures, which match the concepts illustrated throughout the study.

Internal validity is a concern for this case study, because the study attempts to illustrate how and why the effectiveness and efficiency of contingency contracting Information Technology contract management was flawed due to certain specified factors. The analytic strategy of pattern matching is used to address this concern within this case study (Yin, 2008). Pattern matching as an analytic strategy is described in detail in section four of this chapter. Other tactics for addressing internal validity within a case study are to do explanation building, to address rival explanations, and to use logic models (Yin, 2008).

Addressing external validity deals with the question of whether a case study's findings are applicable beyond the immediate case study presented (Yin, 2008). Since case study research deals with the analytic generalization of data, the broader theory attempting to be addressed must be logically determinable from the study (Yin, 2008). Methods used to address external validity of a research design include the use of theory in single-case studies and the use of replication logic in multiple-case studies (Yin, 2008). In this case study, the use of replication logic is frequently utilized, as this is a multiple-case study.

Finally, the test of reliability is addressed within this case study through the use of effective case study protocol and the development of a case study database.[88] The objective of the reliability test of research design is to ensure that if a later investigator conducted the same research in the same manner as the current investigator, the same findings would be found and the same conclusions would be made (Yin, 2008). Reliability is addressed in this case study through the use of effective interview methods including a given script of questions.

[88] Robert Yin, 2008.

4. Analytic Strategy

Regarding the analysis of data within the context of case studies, Dr. Yin states that the effective case study employs one of four techniques to act as a strategy from which the priorities are defined regarding what to analyze and why (Yin, 2008). The four techniques are: relying on theoretical propositions, developing case descriptions, using both quantitative and qualitative data, and examining rival explanations (Yin, 2008). Any or all of these four strategies can be used in practicing specific techniques for analyzing case studies.[89] The specific technique used in this analysis is called pattern matching.

Pattern matching is one of the most desirable techniques to use in case study analysis (Yin, 2008). In the case of a descriptive case study such as this one, pattern matching is especially relevant, particularly in a case such as this when the predicted pattern of variables (hypothesis) is defined prior to data collection (interviews).[90]

The type of pattern matching activity used in the context of this case study is the use of rival explanations as patterns.[91] Specifically, the use of the Gansler report to explain that contract management has been lacking is used in addition to the use of individual testimony that contract management has been lacking in order to demonstrate a pattern of lacking contract management. This pattern diagnoses the reasons as to why the contract management has been lacking, and to judge the effectiveness and efficiency of said contract management.

5. Good Case Studies

Dr. Yin makes recommendations as to how to document effective case studies. Exemplary case studies, he argues, possess five factors: the case study is significant, the case study is complete, the case study considers alternate perspectives, the case study displays sufficient evidence for the conclusion made, the case study is composed in an engaging manner (Yin, 2008). This case study satisfies all of the above requirements.

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[89] Robert Yin, 2008.

[90] Ibid.

[91] Ibid.

The case study is significant in that it addresses an issue that the military is grappling with in terms of current military operations. The contingencies in Iraq and Afghanistan are ongoing military operations and the use of contingency contracting, particularly in the context in Information Technology, is prevalent.

The case study is complete in the sense that it provides adequate history of contracting, contingencies, and Information Technology to serve as back story for the problem. In addition, it utilizes the Gansler report, a relevant document pertaining to the issue at hand. The case study defines terms that may not be understood for the reader, and forms a hypothesis based on the back-story. The data collection in the form of interviews validates the hypothesis, and an analysis of the validation is made followed by recommendations for future topics based on this research.

The case study provides adequate consideration of alternate perspectives to those made as hypotheses. The analysis leans on the data to come to a determination as to whether the hypotheses are supported and valid. The analysis uses pattern matching and recognition to come to an adequate conclusion based on the research.

The case study presents sufficient evidence to conclude the results found based on an analysis of the data (interviews). Three varying points of view from dissimilar backgrounds are used to triangulate upon a conclusion based on the data. No coercion was used in attaining this data in that the interviewer had no prior knowledge of the results of the data collection.

Finally, the case study is composed in an engaging manner in a concise, well written, easy to read format, satisfying the requirement for being an adequate case study.

B. DATA COLLECTION METHODOLOGY

The methodology used in collecting data for this case study is the survey technique, as described in *Research Design and Methods: A Process Approach* by Kenneth S. Bordens and Bruce B. Abbott. More specifically, the interview tactic is utilized to directly collect data.

Figure 8. Research Design and Methods: A Process Approach by Kenneth S. Bordens and Bruce B. Abbott (From: (Bordens & Abbott, 2004).).

1. Survey Technique

The survey technique utilizes the face to face interview as a tactic in gathering information in this case study. The tool for recording the results of the face to face interview is a cassette tape recorder. Results of each of the interviews are published in the interviews included in this case study.

The face-to face interviews were structured in the sense that each subject was asked questions from a specific script (Appendix B.) However, the investigator reserved the right to ask follow up questions in order to clarify the context of responses, making the interview technically unstructured.

Social and contextual effects, which may have had an effect on the interview, such as the presence of other individuals, in addition to the investigator and the subject, and other stimuli in the background of the interview, such as a television set or a computer screen, etc., were mitigated through the use of a closed environment in which the interviews were conducted.

2. Credibility of Subjects

The criteria for selecting individuals whom to interview was as follows: the individual needed to be assigned to a billet during the Iraq and/or Afghanistan contingency with access to contracted personnel performing Information Technology management support. The preference for subjects were that they were an O-3 or above, and could be from any service, preferably the logistics, information professional, or information warfare fields.

Of the seventeen individuals solicited to be interviewed, eight people responded with an interest in participating in the research. All of the positive responses were from Naval Officers. Of the Naval Officers who were receptive to being interviewed, five had credible experience in a position, which had access to Information Technology management during the Iraq and Afghanistan contingencies. Of the five, three personnel were selected as being credible sources for interviews based on the length of time in theatre.

All of the personnel interviewed are currently students in residence at Naval Postgraduate School.

3. Ethical Concerns

All of the personnel interviewed participated in a voluntary status and none was coerced. There was no reimbursement for the subjects' participation in this case study. None of the results were altered, and the interviewer has transcribed the text of the interviews in their entirety.

V. INTERVIEWS

As part of the research associated with this case study, two interviews were conducted with Information Technology managers who were assigned to contingency situations in Iraq. These two personnel were selected due to their unique nature of being privy to working with defense contractors while being tasked with managing IT assets in a contingency situation.

Their backgrounds as career information professionals validate their ability to provide qualitative, subjective assessments of the level of contractor support that they received while involved within the contingency.

These interviews will be used to illustrate a pattern of contractor behavior, and will provide factors associated with contractor behavior within a contingency environment.

The entire content of the following transcription has not been edited to ensure that the integrity and validity of the data provided by the interviewee. This remains consistent with the points addressed by Dr. Yin's methodology of research in terms of data collection.

A. BIOGRAPHIES OF SUBJECTS

1. LCDR Kent Meyer

Lieutenant Commander Kent Meyer was born in Bellefontaine, Ohio and enlisted in the United States Navy in 1991 as a Nuclear Power Machinist Mate. In December of 1996, he was commissioned from Officer Candidate School as an Ensign and entered the Submarine service. In 2004, he laterally transferred to special duty as an Information Professional.

He is currently a student at the Naval Postgraduate School, pursuing a Master's of Science in Information Technology Management. He possesses a Bachelor's of Science degree in Mechanical Engineering, which he received in May of 1996 from North Carolina State University.

He is a member of the Navy Space Cadre and possesses the Information Professional Officer Basic Qualification and Intermediate Qualification. He currently also possesses the Space Systems subspecialty code.

Historical Billets and Duty Stations include:

* Enlisted, Nuclear Power Pipeline: Orlando, FL and Saratoga Springs, NY (1991-1993)

* Nuclear Enlisted Comissioned Program, NC State, Raliegh NC and Pensacola FL (OCS), (1993-1996)

* Nuclear Power Pipeline: Orlando, FL and Charleston, SC (1997-1998)

* Submarine Officer Basic School (1998)

* USS MIAMI: Machinery Division Officer (1998-1999)

* COMSUBRON FOUR: Assistant Operations Officer/IT Specialist/Executive Assistant (1999-2000)

* MEPS, Anchorage AK: Operations Officer/System Administration (2000-2003)

* NNSOC, Dahlgren VA: Remote Earth Sensing Information Officer/Exercise Coordinator/Alternate Space Control Center Crew Member (2003-2004)

* Individual Augmentation, Iraq, Coalition Provisional Authority-South Central Communications Officer, Al Hillah Iraq (Aug 2003- Feb 2004)

* JTAGS PAC (TBM Early Warning), Osan Korea, Commander/OIC (Army Unit) (2005-2007)

* NPS Student (2007-current)

2. LCDR Sam Pringle

Lieutenant Commander Samuel Pringle was born in Albany, Georgia and enlisted in the United States Navy as a Cryptologic Technician – Collection (CTR) in 1991.

He was commissioned through the Navy Reserve Officers' Training Command at Florida A&M University in December 1996 and entered the officer corps as a Surface

Warfare Officer. He laterally transferred to special duty as an Information Professional in 2005. He holds a Bachelor's of Science degree in Computer Information Systems from Florida A&M University.

He holds the Information Professional Basic Qualification and has served as an Information Professional Knowledge Management Officer. He has completed his Joint Professional Military Education Phase One through the distance education program of the Naval War College.

Military Assignments include:

* Enlisted, Recruit Training Command: Orlando, FL (1991)

* Enlisted, NSGA Misawa, Japan (1992-1993)

* NROTC Scholarship Program, Newport RI (NSI) and Florida A&M University, Tallahassee FL, (1993-1996)

* Surface Warfare Division Officers Course (1997)

* USS ARCTIC: Deck Officer/Communications Officer (1997-2000)

* NAVSUBSCOL Groton CT: Training Officer (2000-2004)

* DISA JSSC: Systems Management Officer (2004-2006)

* Individual Augmentation, Multinational Force-Iraq, Camp Victory and U.S. Embassy, Baghdad, Iraq, Knowledge Management Officer (Aug 2005 – Jul 2006)

* Naval Postgraduate School Student, Information Systems and Technology Curriculum (2007-current)

3. LCDR Steven Sherwood

Lieutenant Commander Steven Sherwood, USN enlisted in the Navy in 1988. In 1998, he was a Cum Laude graduate of Hawaii Pacific University receiving a Bachelor of Science of Business Administration with a Major in Computer Information Systems and also earned an Associates of Science of Marketing.

He received a commission as a Navy Supply Officer through Officer Candidate School. He is scheduled to graduate the Naval Post Graduate School (NPS) in June 2009 with a Masters of Business Administration (MBA) with an emphasis in Government Contracting.

LCDR Sherwood's past tours include USS MAKIN ISLAND (LHD 8) as Aviation Supply officer, NAVAL REGIONAL CONTRACTING CENTER SINGAPORE as Services officer and USS BUFFALO (SSN 715) as Supply officer.

While assigned to MAKIN ISLAND assigned as a volunteer for an Individual Augmentation (IA) to Joint Contracting Command Iraq/Afghanistan (JCC I/A) in Baghdad, Iraq as Operations Officer.

As the Services officer at NAVAL REGIONAL CONTRACTING CENTER acted as Technical Representative for the Contracting Officer on five contracts whose value exceeded $200 million and participated on four source selection committees for contracts whose value was in excess of $500 million.

He oversaw the Payalebar Air base AMC operations, Husbanding Services for the Pacific, Military Welfare and Recreation (MWR) services for all port of calls in the Pacific, and Base Operating Services for Singapore.

Participated in various roles on source selection boards; Consolidated Husbanding Services for all Pacific Ports, Consolidated MWR services for the Pacific, Software Development for Automated ordering of Husbanding services for Ships conducting port of calls.

As one of the Operations Officers at JCC I/A, he was responsible for five programs that included the Host Nation First program, He participated in the spiral development of an SQL data base to account for all contracting actions in theater (which was adopted by SOCOM and the Air Force for contingency contracting),

He is an avid women's business advocate program, and a member of the Economic Development Committee for Iraq.

LCDR Sherwood's awards include the Joint Meritorious Service Medal, Navy Commendation Medal, Navy Achievement Medal (5) and other unit and service award.

B. INTERVIEW I: LCDR PRINGLE

Randall: Good afternoon, this is December 11, 2008. This is LT Derek Randall doing the preinterview interview information for LCDR Sam Pringle. LCDR Pringle, you signed and read the informed consent form and the privacy act statement and consent agreement and you were not under duress when you did so, correct?

Pringle: that is correct.

Randall: Outstanding. Alright, we'll get started here on the interview in a second – Again, I just want to go over what the questions were. I gave you a script that had the interview questions that script will be included within the appendix section of my thesis, but again, if there are any follow up questions to any of the questions, I may ask them. Are you comfortable with that?

Pringle: I am comfortable with that.

Randall: Outstanding. Again, now you are not under duress doing this, and you are not doing this for any profit, correct?

Pringle: That is correct.

Randall: Outstanding. Ok. Alright, so let's get started. The information solicited in this interview is intended to describe the context of your participation in the military contingencies that are currently occurring in Afghanistan and Iraq, to give the interviewer (myself) some sort of background information regarding you and your relevance to the operation, and to act as a framework for the interview process. I reserve the right to ask any follow up questions that I feel may be necessary in order to get a full understanding of the context of your response. The interview will be recorded and the results will be used in thesis research. Following the publication of the thesis, the data will be destroyed. All of the answers are voluntary; if at any time you feel uncomfortable answering any of the questions, please feel free to decline to respond. An outline of the questions, which will be asked, is included for your edification, and I gave that to you previously.

Pringle: Yes you did.

Randall: Excellent. Alright, please state your name and rank.

Pringle: My name is Lieutenant Commander Sammie Pringle.

Randall: Alright, and what's your designator/community?

Pringle: I am in the 1600 community, Information Professional Officer.

Randall: And how long have you been an IP officer?

Pringle: I've been an IP officer for three years.

Randall: Alright, as an IP officer, were you ever assigned to forces operating in the contingencies in either Afghanistan or Iraq?

Pringle: That's correct, I was assigned to Iraq.

Randall: Ok, what time were you assigned to Iraq?

Pringle: August 2005 to August 2006.

Randall: In what capacity was your assignment?

Pringle: I was the knowledge management officer for Multinational Forces, Iraq.

Randall: Ok, what does that entail?

Pringle: That entails, my specific function as a project officer, I was responsible for the DPV project, which stands for Detainee Information Tracking Visibility project. Also one of my collateral duties was as, sort of a, data management role. I was also part of a team who did data management for the enterprise wide portal that not only MNF-I used, but other commands like MNCI and other commands that were in the region used.

Randall: Did your assignment include anything to do with defense contracting, and by that I mean procuring any new items, acting as an end user for any new items or using any systems that were procured, or negotiating or dealing with any type of contract?

Pringle: In my specific position, I did not personally procure any items but I would make recommendations to procure IT assets that were used not only for the Detainee Information Tracking project, but for the portal. The contracting officers were, was a different. . .was handled by a different division altogether, so I only made recommendations for IT assets to use in my project.

Randall: Now the recommendations that you made for your IT assets, who were these recommendations to? Were they to the program managers, or were they to the contract officers or the technical representatives?

Pringle: My recommendations were to my boss, who was the director – he changed the name several times – but, the director of knowledge management, and she made those, she passed those recommendations on to eventually she passed those recommendations on to the contracting officers that were required to procure the equipment. So even though in my department, we never, never actually handled any contracts alone, we just made recommendations – those recommendations would go to various boards for authorizations and approval.

Randall: Ok, so would it be fair to say that your commanding officer, who was the director of knowledge management was a member of the Integrated Project Team as the technical representative?

Pringle: Yes, I would say that. You could say that.

Randall: Excellent. Ok, again, today then you are not a warranted contracting officer?

Pringle: Yes, that's correct.

Randall: Alright. Now you said that you weren't directly involved in any of the contracts that were taking place over there?

Pringle: No.

Randall: What programs were you involved with, in terms of procurement, like, what program management. . .what new systems did you get while you were over there?

Pringle: Just those two new, the systems themselves, involved in two projects I meant, it was actually a SharePoint portal, and the DIPV project. . . and then again, it's the. . I'm getting ahead of myself. But the systems themselves weren't run by military; the IT systems were run by civilian contract.

Randall: But even though the IT systems were run by civilian contractors, the materials and logistics were owned by the military, correct?

Pringle: That's correct.

Randall: Alright. Let's talk abput the SharePoint portal first. What physical attributes of the system were there in terms of computer stations, access points? .What physically encompassed that system?

Pringle: Well, each command had their own SharePoint portal server, which pushed. . .consisted of a web server and another just a. . .data server, and the purpose of the portals were to provide each command with the ability to. . .the ability to. . .I can't think of the word right now. . .

Randall: Network?

Pringle: Well, more than just working network, I'm trying to think of the key word right now, because we talk about tacit knowledge and the purpose. . .well, the purpose of the servers were to be a repository so that different commands could go to them and have access to the information, because at that time we were lacking that information. If we needed technical information from another command, we would have to physically call them, and sometimes you couldn't get in touch with a technical representative, so having a SharePoint server was a good repository to get access to the information in a more timely basis, than having to track down a physical person when if you're, you know, most of the commands were in the Green zone, they could still be several miles apart. Even though that might not sound like a lot, you would still have to procure Army assets just to convoy or to held over to the command if you couldn't talk to them directly over the phone, so having this repository of knowledge was extremely beneficial to have for all of the commands.

Randall: So, basically, you said it was a server that connected to each of the different commands, or shared the information with them?

Pringle: Right.

Randall: Ok, in setting this type of system up, were. . .was it difficult for you in order to get the help from contractors that you needed, in terms of getting the technical assistance in terms of setting up the system or etc.?

Pringle: No, it wasn't difficult at all. I think the most difficult pieces were. . .the most difficult piece was training. Because, my office was responsible for training all of the commands that had access to the server. So that, of course, since you mentioned logistics. . .we had to either have someone from their command come to us or we had to go to them, our office was small so that kind of put a strain on our resources, to not only were. . .were we the subject matter experts for the Sharepoint portal. So not only did we have to do training, we had to do administration, but . . .I think the most difficult part was training the other end users to use the system. . .but what, where my boss was very, very savvy was that she used. . .each command had a technical expert of some kind, so rather than teach everyone at that single command, we taught, we would teach a representative of, whether they were the technical representative at that command so that they could go out and teach the people at that command.

Randall: Ok. Sounds like it was a very interesting project.

Pringle: Mmm hmm.

Randall: Let's talk about the second one you were involved in. What physical assets were contained in that project?

Pringle: Well, the physical assets combined. . .would combine. . .the legal department at the. . . a lot of lawyers, Navy lawyers primarily, work at the embassy. You would have. . .I would call them the cops, the Army military police at various commands had. . .why this project was interesting was because you had these various databases, legal had one, which was a simple Excel spreadsheet. Military police had a different one, which was in Access. . .you would have the Intel community which would have a

different database which would be. . .I can't remember what it was, but the purpose of the project was to be able to combine these various databases into a repository similar to the Sharepoint portal. What was the most difficult part of the piece is that. . .until we could get the people who had the authority to. . .people did not want to give up their share of the information easily. We talk of course about getting buy-in from the user, I think the most. . .it was pretty easy to get it from the JAGs, they were on board with it. . .the military police were ok, but they, it just seemed like they had one or two people who were tech savvy at all. And the Intel community, who was extremely savvy with how to use the repositories they had, they just did not want to give up the information, there were biometric systems that could also, that would also be used as part of the repository, but there were classification issues you had to deal with. So, that was the most challenging part of the project, with us to be able to combine these various databases that were in various data formats and produce a product that everyone could use. In fact, that project was still going on after I left.

Randall: Where was the data stored, and under whose purview did the data end up being held?

Pringle: It was buried. Like for instance, the Navy JAGS were in charge of their repository, which they kept on a simple Excel spreadsheet, which was 1000 different, 1000 records on one line, a row. The army kept their own. In fact, the army actually used a similar database to the one they used here in the United States to track the military community. In the Intel community, I'm not sure where the physical database. . .the army kept theirs at . . .their base. The Intel community, I'm not sure where their repository was physically held. If they gave us permission to access some materials, it wouldn't be all.

Randall: Ok, with the jointness of the network, it would seem that the data administration might be somewhat difficult. What was responsible for that data administration, was it you guys, or was it. . .

Pringle: Right.

Randall: Ok, so you guys were. In terms of the network, was any of those data administration tasks contracted out?

Pringle: Yes they were. In fact, my office wasn't responsible for network administration, just the data administration. The civilian contractors who worked at the embassy were responsible for all of the network administration for the various commands. And at each command, if they weren't physically located at the embassy, they would have their own set of civilian contractors who assisted in that endeavor.

Randall: Approximately how much money was involved in terms of putting together that type of contract?

Pringle: The money piece. . .I quite honestly don't remember how much money was involved in that.

Randall: Do you have a ballpark? If you don't, that's fine.

Pringle: I honestly don't.

Randall: Now, these two contracts that you were talking about, these two projects. . . you were putting them together as part of the buildup phase over to Iraq, or were they already knee deep into the contract?

Pringle: It was not part of the build up phase, this was just part of the. . .this was after the buildup phase, and just enhancements to the existing systems that were existing over then.

Randall: Ok, so they were enhancements to existing systems. You don't think they would have been better served as part of the build up phase?

Pringle: Oh definitely. If those systems were existing during the build up phase, it would definitely help, especially with the repository piece and the portal, and the detainee information tracking. They were. . .one example is that when I talked about the military police, when they go out to detain an individual, they have no real way of. . .one of the beauties of having a system like this is that they have a way to. . .I talked about biometrics. . .they could fingerprint them on the scene, send that information wirelessly to the command to identify them on the spot whether that is a person of interest instead of

having to actually take the persons in, vet them there at the command and taking the additional extra time for that person of interest or verifying whether their a person of interest, it's just, it would have helped to have a system, a repository readily available to vet people on the scene instead of having to take them in to an. . .interrogating facility if you want to call it that.

Randall: So it basically became an administrative problem that could have saved a lot more time, a lot more manhours were it to be done in the build up phase.

Pringle: Correct.

Randall: Ok. Were the IT assets that were included in the contractor support adequate for your mission?

Pringle: They were adequate, they were adequate. But I'd like to add, and I apologize if I'm going on to your next question. . .we had, what was lacking there was a VTC capability. It was a problem with bandwidth. Because, you can never have enough, but we only had enough bandwidth to support one or two SIPRnet VTC capabilities. And those capabilities would typically only go to someone who had a star or eagle on their shoulder. And there were various opportunities where someone like a senior enlisted individual or just someone like myself would have been able to use just an unclassified VTC capability as far as the training piece. . .it would have been great to be able to talk to a subject matter expert at another command over unclass VTC. Because the training piece alone is unclassified. The portal that we developed was classified, it was Top Secret and a higher classification. But, it would have been great to have the unclassified piece as well, which we didn't have at the time.

Randall: Ok, so this added functionality that you think would have been good, was it functionality that you wish that you had as part of the contract, or was it functionality that was part of the contract and wasn't fulfilled?

Pringle: It wasn't, it actually was not part of the contract but would have been nice because you mentioned that as part of the build up --- it would have been great to have this as part of the build up because it would have saved time and money. Bottom line.

Randall: Excellent. Well it looks like we've covered everything. I appreciate your time and patience dealing with our humble thesis research.

Pringle: Anytime.

Randall: Again, this is LT Derek Randall interviewing LCDR Sam Pringle for thesis research.

C. INTERVIEW II: LCDR MEYER

Randall: Alright, good afternoon. This is January 22, 2009 – this is LT Derek Randall and I am sitting here with LCDR Kent Meyer, and we are conducting an interview for my thesis entitled "Contingency Contracting and the IT Manager—The Build Up Phase". Good afternoon Kent.

Meyer: Good afternoon.

Randall: Alright. And before we get started I want to make sure that we have it transcribed that you did indeed read, understand and sign the 'Informed Consent' form and the 'Privacy Act' Statement and 'Consent Agreement for Audio and Video Recording," correct?

Meyer: I did.

Randall: Outstanding. Alright, again let me state the purpose of this interview. The purpose of this interview is to gather information for a Master's degree thesis exploring the nature of the use of Information Technology assets used during the Build-Up phase of the current military contingency operations in Iraq and Afghanistan. You are invited to lend your point of view based on your experiences in either Afghanistan or Iraq in the capacity of either a Contracting Officer, Information Warfare practitioner, or Information Professional, in order to more effectively understand the nature of the actions that were taken in preparation for the current contingency operations. Your participation in this study will enable the identification of what methods might be employed to make the contracting process better for future military Contingency Contracting Officers, Information Professionals, and Information Warfare practitioners. The information gathered in this survey and the subsequent interviews are solely for the use of thesis

research. At no time will the information gathered regarding specific participants or agencies be released to any outside agencies. While the analysis of the data and relevant comments to support the analysis will be published in the thesis, at no time will names or identifying information be used or released without prior consent. The benefit of participating in this study is that you will be helping to address a relevant, important issue concerning United States military contracting. There is no other compensation for your participation in this research. And, you are doing this of your own free will, correct?

Meyer: Yes I am.

Randall: Outstanding. Alright, I have the interview here. The information solicited in this interview is intended to describe the context of your participation in the military contingencies that are currently ongoing in Afghanistan and Iraq, and to give myself some sort of background information regarding you and your relevance to the operation and to act as a framework for the interview process. I reserve the right to ask any follow up questions that I feel may be necessary in order to get a full understanding of the context of your response. The interview will be recorded and the results will be used in thesis research. Following the publication of the thesis, the data will be destroyed at the. . .based on what the Interview Review Board wishes to do. All of the answers are voluntary, and at any time if you feel uncomfortable answering any of the questions please feel free to decline to respond. Alright, state your name and rank please, for everyone?

Meyer: My name is Lieutenant Commander Kent Meyer. I am a 1600, which is an Information Professional in the United States Navy.

Randall: Outstanding. Alright, Kent, were you assigned to forces operating in the contingencies in either Afghanistan or Iraq?

Meyer: I was. I was stationed in Iraq from approximately August 2003 to February 2004.

Randall: Ok, And in what capacity was your assignment?

Meyer: I was the communications officer for the Coalition Provisional Authority, south central region. That stretched from Ramadi to. . .included Ramadi, Fallujah, the lower skirts of Baghdad, down to Adewaniya, and Kirkuk, not to include Basrah, so we had about 50 percent of the land mass of Iraq, and I was responsible for the communications at the headquarters and coordinating communications with all of our satellite sites which were five to six in each of the major cities.

Randall: Approximately how many people did you have working under you?

Meyer: I had. . .

Randall: Just so we can get a sense of the scope?

Meyer: I had three people working directly under me. They were an Army communications team that ran our U.S. communications that set up our SIPRnet, and also assisted me in running the network. By the time I left, I guess I had about five, I had two. . .I believe it was two contractors that were providing the communications support for the headquarters region.

Randall: Ok, you stated the breadth of the area in which you were responsible for. Approximately how much in terms of dollars. . .how much was the equipment that you were in charge of, that you were responsible for worth?

Meyer: Ah . . .

Randall: As a ballpark estimate.

Meyer: It was probably a million to maybe a million and a half.

Randall: Ok. Alright. Did your assignment have anything to do with defense contracting?

Meyer: Um, indirectly. We worked with DCA for management of communications assets so the defense contracting guys were coming out there, making sure we were accountable for all of our stuff. They were also indirectly. . . they were the. . .they provided the communications for us. So we had contractors that provided communications support in headquarters and at the regional locations. Specifically at

headquarters, we had Kellogg Brown and Root, KBR, providing our communications support initially, then we brought in a long term solution about the last two to three months I was there.

Randall: Ok, now you stated the number of people that you were responsible for directly. In terms of the contractor support, how many people approximately did they provide?

Meyer: Um, contractor support with KBR, they had two or three personnel that assisted with communications, and maybe, once we shifted off the KBR provided network, there were two contractors that provided our network support.

Randall: Ok. And, you are not a warranted contracting officer, correct?

Meyer: No I'm not.

Randall: Ok. Um, when you were in Iraq, um, were you involved in any contracts that were signed over there?

Meyer: No, not directly.

Randall: Not directly, ok, but, uh as a. . .were there any programs that were implemented during your time?

Meyer: Yeah, at a CPA South Central, that's Coalition Provisional Authority south central, we had probably the leading contracting organization for the reconstruction of Iraq.

Randall: Mm hmm.

Meyer: We probably, we spent as much there as nearly the entire country combined, so the contracting program that we had in place was used up in Baghdad to restructure the nation's contracting process. That contracting process was used and maintained on the computer network at Iraq. I did assist in, the, just generically assisted in the maintenance of the computer systems and assisted in some of the ceremonies that occurred with contracting with the local Iraqis.

Randall: Ok, now you said that it was part of building up the contracting process over there. What IT assets did you use, what types of IT assets did you use to perform this task?

Meyer: We had two local servers and a computer network initially of about 40 computers that were, that were in a coalition environment, had the British, Australian, U.S., some State Department, Polish, Spanish, and Ukrainian officers that were operating on the network.

Randall: Now the assets that you were provided, do you believe that they were adequate to perform the tasks that you were doing during the build up phase?

Meyer: The initial assets of running, um, running our operations were not adequate, at all.

Randall: How so?

Meyer: We did not have adequate communications bandwidth or communications resources, the networks that we had, while the headquarters initially had enough computers to operate, we did not have effective communications back to either Iraq or any real broadband connection. I think we had about 128 kbps connection, and that was running off of a KBR network, and there were issues on getting adequate support from KBR. No one could. . .it was known that Kellogg Brown and Root was supposed to provide us communications support, but no one could find the contract which stated what kind of communications support KBR was to provide. So, it was fairly contentious to run all of our computers off of a very slow connection. We focused on providing, or I focused on providing adequate communications support to our operations and our SES equivalent, our chief that was running the group, because our Operations Officer was letting all of the contracts, updating Baghdad on all of our sites. When we went out, we did not have adequate computer resources or network resources for communications support for all of our sites, so we had to scrounge and reallocate computers and network resources, so some of the people that were coming in were coming in with Inmarsat terminals that local agencies had provided, or they were running off of an NGO that was

in the local area so that they could get adequate communications. Otherwise they had a computer and they had no ability to talk, no internet connectivity or any communications support.

Randall: Now you stated that the contracting organization provided their contracting support. The equipment that they used, you stated that it was a little bit better, or not in so many words but you said that it was somewhat adequate. In terms of accomplishing a task for which they were contracted, communications support, do you think that their equipment was adequate for that task?

Meyer: If they had fully shared their communications resources it would be more. . .I would say it would be potentially more adequate as far as internet connectivity. As far as voice communications, we had to rely on the local Iraqi network until we had, until Baghdad, the six and four, the Coalition Provisional Authority had let a nationwide contract to bring broadband services to the headquarters. Once that was in, then we had adequate internet and phone or voice support. We had to develop our own local communications with handheld radios and land based communications for convoy support and such. I don't believe that was ever contracted for from KBR, but that was completely inadequate support even after I left.

Randall: But there wasn't any logistic support for that mission that you had, in order to provide local communications?

Meyer: No, no, we had to let contracts to bring in local Iraqis to repair our phone lines so we could get back on to the Iraqi phone grid so we could use land based communications to talk back to Baghdad.

Randall: Alright, when you were first getting started, when you got in theater, because the time frame that you gave me suggested that you were there from the build up phase all the way to maturity, how difficult was it for you to get the contractors on board – were the contractors there before you arrived, or did they get there after you arrived? How seamless was the integration?

Meyer: So, I actually arrived just after the transformation of ORHA, which was the office or reconstruction and humanitarian assistance, after it had transformed from ORHA to CPA, and CPA became the interim government for Iraq. I was, I got in theater about six months after kick off, so things were fairly stabilized with CPA. The contractors were there, the contractors came in just behind all the ground forces, all the fighting forces, so them setting up a camp was fairly established – they were there, it was fairly established. But, the agreement behind us and the contractors was very difficult because we were not operating in a military capacity, we were operating in a State functionality. So we were operating as part of the local government. The military -- we were located on our own compound, separate from the military compound, so we operated under our own premise, which really limited our capability to truly effectively do our job at full capacity. By the time I left, CPA had fairly stabilized and they were transitioning over to handing over control back to the Iraqis and disestablishing CPA. I probably left about 4-6 months before that occurred, but they were fairly stabilized and the contractor support that we had gotten by then was much better, and it was good, but going into theater, there was not adequate support or contracts, or even a knowledge of what we would need to operate for our mission.

Randall: Now as a communications officer as opposed to say, a knowledge manager, you were more focused with say the utility and the function of making sure the information is flowing, compared to a knowledge manager who might be responsible for making sure that the assets are available to each of the stakeholders. In providing that utility, did you think that the IT assets that were available and made available by the contractors and both by troops on ground, did you think they were enhanced by the logistics and communications support provided by the contractors, or were they hindered by the administrative responsibilities that came with managing the contract?

Meyer: So the administrative management of the contract, outside of trying to figure out what, looking at initially what we were responsible for, what KBR was responsible for to provide CPA south central, that management was, was, kind of not there - - - KBR knew what they were supposed to provide for support, housing, you know feeding, all that stuff . . .communication, while it was implied or probably stated in the

contract, we could actually never get the contract to see what we were required to. To keep, and this was the problem in all of the, I would say all of the U.S. led areas, the agency, or the British who were in charge of Basra had contracted out their own support, so they had their own funds to get a more robust communication set. Even though I was there functioning technically as the communications officer, an implied role in that was knowledge manager, so it wasn't just making sure the computers were up and running, but it's also making sure that they had access to the correct information. The way the network was established and the way in was initially set up administratively and procedurally was a big problem because I had at least one incident that corrupted a lot of information and dramatically affected operations, and due to the classified nature of information spillage, it lost a lot of operational information for the coalition, specifically a lot of the contract data that we had done, because the network had been corrupted.

Randall: But you felt like, you didn't feel like you were wasting time making sure the contractors were doing their job as opposed to doing your job effectively?

Meyer: Yeah, you know, I didn't spend the time on that, so I was probably more frustrated because I didn't know what services I was supposed to be provided so I couldn't waste my time doing that. I had to spend my time trying to patchwork and run the system that I had using what the contractors gave me, and I didn't, I didn't even try to negotiate or get anything more out of the contractors because KBR was pretty much running, and this was in my observation, they were really running on their own, so like DCMA was located over on the military base, and they would make sure that KBR was giving the basic services provided, but communications, we knew that they were. . .it was pretty much known that they were supposed to provide us services, but KBR was saying, well you know what, we don't have proof of that, so we took what they gave us and we stayed with it, so it was very difficult until we had our own direct contract for communications support brought in.

Randall: Alright, and I understand that, you know, it was a contingency, and there were extenuating circumstances based on the operation that was ongoing on the ground, but in your opinion, do you feel as if a better job could have been done from the contract administration standpoint in terms of holding the contractor to a standard rather than what occurred?

Meyer: Oh, absolutely. In modern operations you really can't do much without communications. In this case, specifically, headquarters should have known what the contractor was responsible for in terms of communications. And if, in our case, KBR wasn't responsible, you know, it is possible that KBR wasn't responsible for communications, so it was good that they gave us that, but you can't go into a situation where you have no communications support. You should know that when you go in, that you have to take and use. . .you need to have rapid and flexible contracts that allow you get services very quickly, and whether it's from a local provider or from a U.S. provider, you know, as far as communications go, if I'm using unclassified networks I don't care – I can add in extra security to provide that, but I had issues with getting equipment through Baghdad for my hand held radios because of the administrative, bureaucratic process that they had due to the cell phone problem that they had up in Baghdad. It delayed all computer assets because the communications guys had put a restriction on the entire countries assets carte blanche and they didn't look at how it affected the satellite sites. Since, in south central we were responsible for satellite areas and we were sending people out as government representatives and state representatives without any communications support back. . .I mean, we had some satellite phones that worked ok, but were not any good for daily operations and solid connectivity. We were really putting people in much greater risk of danger by not having adequate communications, and the only way of having those communications is to go in with proper contracting support. If you don't, unless you have flyweight packages that have set up, but we didn't go in as a full military operations, we went in with some military resources, but as a state function, so we needed to have some ability to purchase local support without having to

waste our time and wait for a contracting process back to the U.S. and that severely hampered our ability and could have potentially put some people at risk or caused some extreme damage.

Randall: Alright, thank you very much. Again, this is LT Derek Randall, I was sitting here interviewing LCDR Kent Meyer on 22 Jan 2009 for thesis research. Thank you.

Meyer. Mmm hmm.

D. INTERVIEW III: LCDR SHERWOOD.

Randall: Good afternoon, today is February 22, 2009, I'm Lieutenant Derek Randall, and I'm sitting here with LCDR Steven Sherwood and we are conducting an interview for thesis research. Good afternoon Steve.

Sherwood: Good afternoon Derek.

Randall: Alright. The purpose of this solicitation, and subsequent interview, is to gather information for a master's degree thesis exploring the nature of the use of Information Technology assets during the Build Up phase of the current military contingency operations in Iraq and Afghanistan.

You are invited to lend your point of view based on your experiences in either Afghanistan or Iraq in the capacity of either a contracting officer, an information warfare practitioner, or information professional in order to more effectively understand the nature of the actions that were taken in preparation for the current contingency operations.

Your participation in this study will enable the identification of what methods might be employed to make the contracting process better for future military Contingency Contracting Officers, Information Professionals and Information Warfare practitioners.

The information gathered in this survey and the subsequent interviews are solely for the use of thesis research. At no time will the information gathered regarding specific participants or agencies be released to any outside agencies. While the analysis of the

data and relevant comments to support the analysis will be published in the thesis, at no time will names or identifying information be used or released without prior consent. And, in terms of prior consent, you did read and sign the Informed Consent form?

Sherwood: Yes.

Randall: And you are not under duress and not being paid to do this?

Sherwood: Correct.

Randall: Alright. You did read and sign the Privacy Act Statement and Consent agreement for audio/video recording, correct?

Sherwood: Yes.

Randall: Alright. And you weren't under duress when you signed that either, correct?

Sherwood: Correct.

Randall: Awesome. Alright. The benefit of participating in this study is that you will be helping to address a relevant, important issue concerning United States military contracting. There is no other compensation for your participation in this research.

Any questions you may have should be addressed to myself or Captain Charles Seaberry. And, thank you for your contribution to this important research. And ah, now we'll get started with the interview. Do you have any questions before we get started?

Sherwood: I do not.

Randall: Awesome. Alright. The information solicited in this interview is intended to describe the context of your participation in the military contingencies that are currently occurring in Afghanistan and Iraq, to give some sort of background information regarding you and your relevance to the operation, and to act as a framework for the interview process. I reserve the right to ask any follow up questions that I feel may be necessary in order to get a full understanding of the context of your response.

The interview will be recorded and the results will be used in thesis research. Following the publication of the thesis, the data will be destroyed at the, whenever the interview review board wishes to destroy it.

All of the answers are voluntary; if at any time you feel uncomfortable answering any of the questions, please feel free to decline to respond.

Alright. Can you please state your name and rank, please?

Sherwood: Lieutenant Commander Steven Sherwood, Supply Corps, United States Navy. That's a 3100 designation.

Randall: Awesome. Steve, were you assigned to forces participating in the contingencies in either Afghanistan or Iraq?

Sherwood: Yes, I was assigned to Joint Contracting Command Iraq and Afghanistan. I was there from November of 2006 through July/August of 2007. During that time, I was on the Major General Darryl Scott's staff as an Assistant Operations Officer. Some of the programs that I worked with were, we developed an SQL database that would be deployed through a thin client server through the theater, which would help record all contracting actions by all of the contracting offices in Iraq and Afghanistan. We were originally using an Access database that the offices were able to change and were due up to the general's staff office by the fifth of the month. And, that data was then compiled into a single report. Once we normalized the data as much as possible we would generate reports of it and give those to the general so that he could make decisions on where. . .who, what when where and why, to deploy his forces in order to support all actions. . .um, how many contracting officers should be in each, how many actions were due, and how complex the actions were, as much as we could. This data did not come in for some time, so once the data was received it was sort of time late. But, deploying an SQL server, which was a gift from BTA – Business Transformation Agency. They came in with their money and developed the software to our requirements through IBM. Once we had that in place, it was able to record the data as soon as the contracting officers put the data in. The General then made a requirement to have all data entered in within three days of the action. So once a contract was modified, let, signed, closed, the contracting

officers had three days to input that data into the system. So now the data was no longer, no later than three days old at any point in time. So, if there was. . .questions we could mine for that data and know that it was no more than three days old, as long as everyone was meeting the requirements for what they had to do. Other programs that I worked on were the Host Nation First program, the. . .Deployment of. . .er. . .the Reduction of Materials to be transported in, and then transfer that over to contracting. . .and how to develop that process, and the Iraqi women's business advocate. There was another job in there, I couldn't remember what it was.

Randall: Alright. Let's talk about first, your first project that you described. Who was responsible for the data administration? I know that you said that you guys were responsible for, that your office was responsible for normalizing the data, but in terms of making sure that the data that you received wasn't inaccurate, or making sure that the fields were normalized. . .what other responsibilities. . .you guys were responsible for normalizing the data, but were you responsible for data administration?

Sherwood: Each contracting office would keep their own Microsoft Access database there. And before they sent it to us, usually, the . . .whoever was in charge of that contracting activity would send somebody into their office to make sure they could. . . lie to us in the right way. To make sure when they sent the data to us, they wouldn't get in trouble for anything, and that they could change anything that they needed to before they sent it to us. That was one of the problems with using that type of system, that there was no requirement for any of the fields, there was no. . .there was no format for any of the data that we put in force because each of the contracting offices had their own opinion over what it should be. They would actually change the cells themselves and rename them to things that they thought were better. They would move the order of the cells so that way each time they came in they would add cells that they were important, and remove cells that didn't think were important, so when it came to us, we would have to put the cells in the right order, figure out if the cells were actually meaning the same things by their names, cause we got extra cells that we weren't keeping track of in the

theater, and add cells into certain contracting offices in order to make the data all fit together, so when you would ask certain questions, we could answer them about certain contracting offices but not about others.

Randall: Ok.

Sherwood: So once the data came to us it was ours, and it was my responsibility to maintain that data.

Randall: Ok, so you maintained the data. In terms of maintenance of the data, your office was responsible for that. In terms of storage of the data, now you said it was a thin client – where were the servers?

Sherwood: They were at the. . .we were just talking about the Access database, right? Now once we moved over to the SQL server and the thin client, the responsibility and maintenance of the data was actually shifted to IBM into servers in Virginia.

Randall: Ok, so it was contracted?

Sherwood: It was contracted. Yes.

Randall: Ok, how would you characterize the quality of service provided by the contractor in terms of data storage.

Sherwood: That particular contracted did well. Yes.

Randall: Ok. Alright. Now, you said that you were privy to a lot of other IT contracts as well?

Sherwood: My background with a lot of other IT contracts. . .there were a couple of places where I had access to IT contractors. One was in Baghdad where my local office was supported through, and the IT office there was actually contracted out, and we actually had Iraqi nationals who ran that underneath of a contract, so they were actually running the data as the technicians. The person in charge was a US National who maintained security somehow, I couldn't tell you. I also had to deal with the Embassy's IT, which was run by the military because it was in conjunction with us there in the Green Zone. The way that I dealt with other contractors in the theater through IT is as we were deploying the thin client server in order to get that into place, one of the thing I did

was I went to each individual contracting office in the theater, thirteen locations in Iraq, and six in Afghanistan and each of those FOBs, or bases, which they really weren't, the Forward Operating Bases or the main bases back in the back, I had to work with each of the IT offices in order to deploy the thin client server to ensure that it was able to get into their security, that it acknowledged the program, that it met the requirements that they needed in order to allow access for the thin client onto their network. And through that I had a vast dealing with all the IT administrators on those different locations. The one place that we were never able to deploy the system onto their network was in Fallujah through the Marines. The Marines ran that through a contract, they had their own system that they were keeping and they were the only contracting officer that didn't have their evaluations done by JCCIA. They got their contracting authority through JCCIA but they were still evaluated by the base commander that was there. And that led to some problems, so what we wound up doing in that location was we deployed a satellite, a V band to the location, dedicated, got them a computer that they could work on in order to use it, and they accessed their internet through that in order to put this in place.

Randall: Okay, now you said that you got with each of the data administrators at each of the satellite locations. Were your dealings with those data administrators, all of these efficient or effective in terms of getting all that you needed to get accomplished?

Sherwood: That. . .I would laugh at this point in time but I think that's unprofessional for what we're dealing with right now. The. . .my general impression was, with a few exceptions, there were a few exceptions where you could go in, find out who could actually make a decision, understand what you were talking about, and deploy the system – know the requirements that they would need in order to have that done. Those were the few exceptions. The majority of time, you would come in, you would set appointments so that you would talk with people, you would tell them in advance, explain in emails, official correspondence explaining this is what we're doing, this is what we need, and we would need those requirements in order to do this, we would go in, we would meet with people, and they would look at us baffled, some of them wouldn't have any idea of what a thin client was. And these were the administrators of networks, for operating bases. Once they had, there were several times where we would work with

these people and they would say, this is what we need, and we'd provide it to them, whether it be certifications, whether it be what the client was doing, how it would work on their systems, what were the requirements. . .I'm trying to remember some of them. . .Microsoft has certain things that they can put onto the computer to let the thin client work, and you would tell them what these things were, they were free over the. . .through Microsoft if you needed to use these, they were certified through DoD, and you would provide all of these certifications, I had them all with me, and they would say, ok this is what we need, we provided all that they needed and then they would go and they would come back and say, "Well you know, I need you to talk to Johnny Smith over here, I can't make this decision." So now you've spent weeks getting ready for this visit to their FOB, you get there, you sit down, spend a day or so going through this with them,

Randall: And they waste your time.

Sherwood: And they wasted all my time. Now I've got to go in with another person, and start all over and they say, "well, how come I didn't hear about this before you got here on my FOB."

Randall: So those sound like bureaucratic and organizational elements that deterred the efficiency and effectiveness of what you were trying to do. Now, the data administrators that you were talking about, were those primarily contractor personnel, or were those primarily military personnel, or a mixture of both?

Sherwood: A mixture of both. You would find some. . .some of the networks were run by military, and they were spot on, they knew what they were talking about, you wouldn't have any problems. Some of the civilian contractors. . .spot on, same question. Then you would find them on the opposite range on both swings. The network administrators I loved the best were the ones that didn't have a clue what you were doing but just said, yeah, ok, tell me what I need to do, and I would have my IT person travelling with me, sit over their shoulder on their network and set settings to allow our system to work. Those were the ones I would love the best because they didn't know what they were doing and they didn't stop me from doing what I needed to do to accomplish the mission.

Randall: Now, the information that you guys were giving over your client, do you think that they information that you were giving was vital and/or important for mission accomplishment for each of these satellite organizations?

Sherwood: That's, um. . .

[pause]

Sherwood: That's actually a really great question to hit on. When General Petraeus came in to take over Multinational Task Force Iraq,

Randall: MNFI?

Sherwood: MNFI, there you go, Multinational Forces Iraq, he looked at the Iraqi first program, and it actually morphed into the Host Nation First program, what that program was designed for was, there was a large number of people who believed that the reason the insurgency was so. . .so expansive, was that people wanted to feed their families. They needed a way to make sure their children didn't starve. We as a. . .the state department would come in and pull down all state owned enterprises, which employed over 60 percent of the nation. So we put out of work 60 percent of the nation within a day. And these people needed to feed their families. So the belief was that the insurgents who would offer money, fifty dollars, hundred dollars, whatever the price was, to a man who to go plant a bomb on the side of the road, he could feed his family for a month. And they'd do this in desperation. They weren't doing it for ideological reasons, they were doing it because they didn't want to see their children starve. So the Host Nation First program directed that if at all possible, any contract in theatre would be given to a company that was Iraqi first, or second, employing Iraqis, and the goal was to put those contracts into places where the attacks were the greatest. By employing the people who were paid to do this gave them an alternate means of life. He did this as an end. . .this was a directive from MNFI to use Host Nation program. And the only way that we could measure this was by collecting data on it. The only way that we could influence the contracting offices below us was to see how they were doing it. By being able to normalize the data into a single package and looking at the things that they were contracting for, looking at the locations of the bases, we could influence that. What this

did was a couple things: if we would see a rise in contracts back to the states because they couldn't find a local source, but there was another FOB within 10 to 15 miles of them and they were contracting for it, we could then supply that contractors name to the other FOB, and they could start employing more Iraqis. It had a direct, direct, correlation to. . .we actually monitored as the money would increase in that area, the number of attacks in the vicinity, in that area, would go down. It was a direct correlation. We could plot it. And we could, once it reached a certain point, the correlation dropped off. At the beginning, as you started to put money in, as more money went in, the attacks went down at the same rate. So, do I think that this was important in order to deploy, in order to put Iraqis to work and keep soldiers alive, yeah. We kept our forces alive by being able to supply, contractors, by supplying Iraqis another way to earn a life. . .another way to feed their children.

Randall: Okay. Going back to your relationship with the contractors, you stated you had some issues dealing with some of the contractor personnel in terms of getting this system deployed out to each of these individual areas. What types of specific problems did you have with the contractors, and do you think that those problems. . .maybe this a separate question, do you think that those problems were endemic of something that was an issue between contractors and the forces for which they were contracted?

Sherwood: Okay. When you say the contractors, you specifically mean the contractors for IT systems for management for each of the FOBs?

Randall: Correct.

Sherwood: With those contractors that I was dealing with for deploying the system, there was a. . .they. . .let me start out by saying that none of the networks throughout the theater was the same. None of them had the same requirements, none of them supplied the same services, none of them would use the same hardware, none of them would use the same software, in the same way. Each of them were separate, unique, no standardization, and each of the requirements was different upon how the contractor interpreted his contract which was different. . .each of the contracts were

separate. There was no one standard contract that deployed it across the theater that each of the contractors was using. They were developed locally, as best as it could be developed, with no centralization or (muffled) to integrate the systems in one uniform manner.

Randall: And they weren't the same contractors, either?

Sherwood: You. . .I don't have the information for that. Do I think that you had a contractor who might have been operating in more that one FOB? Yes. Do I think that those. . .do I think that all the FOBs had the same contractors, I don't have the information available to me, but as far as I remember, I would say no.

Randall: Ok. Do you think that the issues that you were talking about in terms of interoperability. . .

Sherwood: (nodding) interoperability.

Randall: In terms of not. . .in terms of having difficulty dealing with contractors. Do you think those were endemic of a problem in between the people out in the field and the contractors?

Sherwood: I personally don't believe so. I had to deal with a lot of people out in the fields. . .and, doorkickers. That's what everyone would call them were doorkickers, you had to deal with the doorkickers. That was the purpose of being there, if you weren't bending over backwards for a doorkicker, you were in the wrong, because those guys were kicking in doors and putting themselves in front of the bullet. And it sometimes felt like when you were dealing with contractors that they did not see it that way. They would say, ok, well you're another military member, and you're coming in expecting the world, and we're not gonna. . .this is not in my contract to support you, nowhere in my contract does it say that I'm supposed to help you deploy anything on my off server. And that's actually what we wound up with in Fallujah. It was the one place in the whole theater where the contractor put their feet in the ground and said, well, these people don't work for you, though you might give them their contracting authority, they work for the base. That you want to keep this data does not affect me, nowhere in my contract does it say that I'm supposed to deploy that software, and which wound up with the solution of

putting the V-band, the mobile satellite into their office so that they could actually use it. The contracting officer there was actually one of the lowest priorities I think for the base. In order to do market research to ensure that we get fair and adequate competition, one of the best things you can use is the internet to say, ok, well how much does a pack of pens cost? We have some catalogs, but even to access those, most of the military's catalogs and systems are over the internet. You want to go to GSA and find out what something costs, you have to be on the internet. They would literally be working with speeds less than 14K. They would press a button, and because of the mountains of data that's put on web pages today, they would click a button, walk away, go get a cup of coffee, go do something else, and whatever came up was what they were going to write down because they couldn't spend more time than that researching data or trying to get more sources, so they were severely hampered in supporting the doorkickers because the network people didn't feel like it was a priority to support buying stuff. The contracting effort.

Randall: Alright. With all that said, if you had to do that again, what would you recommend to make contract management and IT management better within Iraq?

Sherwood: I would use a phased based acquisition system. And using the Yoder three tier model, develop the contracting requirements for the theater before we actually went in, do a central contract that could be. . .one contract for that for the whole theater for your IT system. That doesn't mean, I'm not necessarily promoting that one contractor should be doing the whole contract for the theater, but one requirement for the theater, which should have been negotiated beforehand, with the equipment beforehand, that task orders could have been placed on for individual locations. A network to support 200 people, in a FOB to be deployed. With an administrator, with these requirements on it, that could do access speeds up to whatever your central requirements were. And when you set up a FOB, task order. And you pull out that contract and you say, I'm going to compete this requirement that I've already determined against these four or five companies or whoever or however many meet that requirement, and say, we're competing this requirement, you know the requirement, please give us your bids, and then award it. So that way, you have one standardization, one type of IT system throughout the theater that could be managed centrally. And what that would do is allow,

like for instance, the software that we needed for all the contracting officers, we could have then had one location, one central manager, and said, you are the coordinator between all of these contracts, we want this deployed on these offices, or these computers. We could have collected the data on which computer numbers there were. So they turn off their computer one day, and next day when they turn it on, the software pops up and is on their system. I didn't need to travel. . .I did need to travel to the 13 different FOBs and the 6 in Afghanistan, because what that enabled us to do was because I gave training to each contracting officer personally in theater, there was never a, well we don't understand how to use this. Which was said anyway, once we started to use it and I would explain where I was in the training that I gave them, when I covered it, and that I didn't receive any requests for help for this and that I had people to support them 24 hours a day. That is with the IT system. With the contracting system, by using a phased based approach, you can then keep central your major contracts, deploy them throughout the theater, make your buys more centrally to reduce the costs of everything, so different FOBs weren't competing over price of a single vendor and getting different prices. Concrete in Camp Victory, which is less than 5 miles from the green zone, 10 miles, I can't remember exactly. Those two bases should have been paying the same thing for concrete with the exception of the cost of the danger traveling to one base vice the other. If you found out the danger was coming to one base was more than the other you would still have to compensate for that, but the base price on the concrete would be the same. The transportation charges would be different but the concrete would be the same.

Randall: Alright Steve. I appreciate you sitting down with me, giving this interview. Again, this is LT Derek Randall, LCDR Steve Sherwood, conducting thesis research. Thank you.

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VI. ANALYSIS AND DISCUSSION

A. ANALYSIS OF RESPONSES

Each of the interviews provided a wealth of information regarding the role of Information Technology managers in the contingency operations currently ongoing in Iraq; however, no information was gained on the operations that were ongoing in Afghanistan. Unfortunately, a lack of information regarding the Afghanistan contingency operations severely limits the ability to conduct an appropriate analysis of the role of Information Technology managers in the Afghanistan contingency.

Nevertheless, the interviews did provide a large wealth of information regarding the relationship between Information Technology management and contractor management in the Iraq contingency.

1. LCDR Meyer Interview

Lieutenant Commander Kent Meyer was selected to be interviewed for this thesis based on his prior experience as a Communications Officer working for Coalition Provisional Authority, South Central Iraq during the Iraq contingency. A prior enlisted sailor and also a prior nuclear submariner, Lieutenant Commander Meyer also has a unique perspective in that he has also served as the Officer-In-Charge of JTAGS PAC, an Army communications unit. His experience working with coalition forces and with joint forces gives him a unique perspective regarding different idiosyncratic tendencies that each service may possess in dealing with defense contractors.

As one of the more knowledgeable Information Professional officers in the fleet, Lieutenant Commander Meyer acts as a great wealth of knowledge for those wishing to learn more about the Information Professional community. In addition to being a student in the Information Systems and Technology curriculum at the Naval Postgraduate School, he is also the Training Officer for newly accessed Information Professionals, providing newly redesignated Information Professional Naval officers the guidance to begin work towards their Information Professional Basic Qualification and Intermediate Qualification.

The interview with Lieutenant Commander Meyer was conducted on January 22, 2009 in the Department of Information Sciences 'TNT' laboratory on the second deck of Root Hall with the interviewer, Lieutenant Randall, and Lieutenant Commander Meyer present. The interview was recorded utilizing a Sony audiocassette tape recorder and later transcribed into chapter IV of this case study.

Lieutenant Commander Meyer seemed at rest, contented, and not under any stress during the interview. His disposition was relaxed and jovial.

Lieutenant Commander Meyer identified several different areas, which were of concern to him during his interview. These areas were identified as areas in which the performance of his duties as the Communications officer for Coalition Provisional Authority – South Central may have been affected either positively or negatively in terms of mission accomplishment.

One of the first issues that was raised in Lieutenant Commander Meyer's interview was the fact that while he was responsible for a large area of the land mass of Iraq (in his own words, over fifty percent of the land mass,) he was only assigned a modest number of individuals.[92] He stated that he was assigned anywhere from three to five uniformed individuals at one time to work with two contractors and over a million dollars worth of equipment.[93] The fact that he was assigned such a small number of personnel to cover such a large area of the Iraqi nation was a major issue, which affected his performance.[94]

Another of the issues identified by Lieutenant Commander Meyer was the fact that, in his opinion, he was issued an inadequate amount of equipment with which to perform his duties.[95] When tasked with constructing a communications tool with which to communicate with other land units in the area, Lieutenant Commander Meyer states that unit was forced to create a makeshift communications network with handheld radios

[92] Kent Meyer, 2009.

[93] Ibid.

[94] Ibid.

[95] Ibid.

due to the inadequate equipment on hand.[96] Were the requirements for Lieutenant Commander Meyer's duties more accurately defined, he would most likely have been able to have the correct amount of equipment issued to him to have on hand for such a situation.

Lieutenant Commander Meyer also identified the issue of bandwidth as a major problem.[97] When initially tasked with setting up communications capabilities, Lieutenant Commander Meyer stated that the bandwidth was so poor that his unit was forced to rely upon the local Iraqi capability in terms of bandwidth, which he stated was as low as 128 kbps.[98] This lack of bandwidth was a major factor in his ability to create and maintain effective communications.

Finally, Lieutenant Commander Meyer talks about the fact that as a unit commander, he was not privy to the details of the contract between the government and the contractors he was assigned.[99] Without knowledge of the requirements, which he was contracting for, and without knowledge of the services, which the contractor is required to provide, it became increasingly more difficult for Lieutenant Commander Meyer to perform his tasks effectively and efficiently as a communications officer responsible for providing communications capability to ground troops.

Overall, the interview with Lieutenant Commander Meyer presented a genuinely concerned unit commander responsible for providing a much needed service to support the ground soldier. His comments did not seem to come from someone with a 'cross to bear' in that he seemed to be aware of his successes and shortcomings during his time in theater. The information gleaned from his interview was more than helpful for the case study.

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[96] Kent Meyer, 2009.

[97] Ibid.

[98] Ibid.

[99] Ibid.

2. LCDR Pringle Interview

Lieutenant Commander Sam Pringle was selected to be interviewed for this case study based on the fact that as a newly accessed Information Professional, he was sent on his first duty to Iraq as an Individual Augmentee after re-designating to the Information Professional community from the Navy Surface Warfare community. In Iraq, he served as Knowledge Management Officer for Multinational Force Iraq and for the U.S. Embassy.

Lieutenant Commander Pringle's perspective is important based on the fact that he provides the perspective of the new, inexperienced Information Technology Manager to the situation on the ground in Iraq.

The interview with Lieutenant Commander Pringle was conducted on December 11, 2008 at his residence in La Mesa Housing Area, Monterey, California. Present for the interview were Lieutenant Commander Pringle and the interviewer, Lieutenant Randall. The information for the interview was recorded utilizing a Sony audiocassette recorder and was later transcribed into chapter IV of this study.

Lieutenant Commander Pringle was at rest throughout the interview, and did not seem to be distracted at all. His mood was relaxed and jovial.

One of the details that Lieutenant Commander Pringle identifies early in the interview is the fact that while he was responsible for making recommendations regarding what equipment was to be procured for the mission, he was not responsible for the procurement of the equipment.[100] This is important because it underscores the fact that his primary concern and perspective is that of the individual focused on accomplishing the mission rather than being preoccupied with supplying the war effort. This is also important when taken into context with the fact that Lieutenant Commander Pringle was selected to be interviewed for this case study based on his non-biased background. The fact that he was not responsible for procurement simply underscores his lack of bias.

[100] Sam Pringle, 2008.

He also identifies early on in the interview that his function in the communications effort is that of the knowledge manager – the individual responsible for ensuring that all persons privy to information receive and comprehend the intended information for their tasks.[101] This is vital in that while, as stated above, he is responsible for recommending what new technologies should be procured for the knowledge management effort, he is also responsible for ensuring that the personnel assigned to operate the same technologies are able to effectively operate the equipment and to gain the maximum available information to be gleaned from its usage.

One of the first issues that Lieutenant Commander Pringle identifies is the issues that had to deal with training individuals to utilize equipment.[102] He states that while it would be difficult for him to be able to assign all of his personnel to provide an adequate amount of training to the personnel within his area of operation, he quickly found a solution to the issue in that he would train one individual from each of the separate commands, and task that individual with being the subject matter expert on the operation of the equipment which he was assigned to train people to use.[103] In his opinion, this tactic was an effective one in that it enabled him to marshal his resources more efficiently and effectively.[104]

Again, the issue of bandwidth is raised as a major detriment to mission effectiveness. Lieutenant Commander Pringle states that if he was allotted more bandwidth, it would have been easier for him to accomplish the training mission in that he would be able to communicate via video-teleconference rather than having to send a physical person over to each individual command, a tactic, which would have saved more time and resources.[105]

Overall, the interview with Lieutenant Commander Pringle was very similar to the interview with Lieutenant Commander Meyer in that it presented an individual who

[101] Sam Pringle, 2008.

[102] Ibid.

[103] Ibid.

[104] Ibid.

[105] Ibid.

seemed capable of providing a genuinely critical assessment of his time as a knowledge manager in Iraq. The information gleaned from his interview was more than helpful for the case study.

3. LCDR Sherwood Interview

The interview with Lieutenant Commander Sherwood is unique when compared to the other two interviews in that Lieutenant Commander Sherwood's perspective is that not of a Navy Information Professional, but of a Navy Logistician. Lieutenant Commander Sherwood served in the Iraq contingency as an Operations Officer for Joint Contracting Command Iraq and Afghanistan, His duty as an Operations Officer for a contracting agency gives him a particularly unique perspective both in the realms of contracting and as an operational advisor.

Further investigation into the background of Lieutenant Commander Sherwood yielded the fact that not only did he have a rich and varied background as a Supply Corps logistician, he also earned a degree in Computer Information Systems, which gives him a strong fundamental grasp of the issues which Information Technology managers are concerned with.[106]

Lieutenant Commander Sherwood's interview was conducted in Dudley Knox Library in a private study room with Lieutenant Commander Sherwood, Captain Seaberry, and Lieutenant Randall present. The interview was recorded on a Sony audiocassette recorder and was transcript for this case study by Lieutenant Randall.

Lieutenant Commander Sherwood was mellow and calm throughout his entire interview. His mood and demeanor were relaxed and jovial.

The issues discussed in Lieutenant Commander Sherwood's interview were surprisingly the same in that they dealt primarily with issues concerning Information Technology management and the services provided by contractors and Information Technology managers to support the ground forces. More surprising is the fact that his

[106] Steve Sherwood, 2009.

issues coincide similarly even though he possesses a decidedly unique perspective relative to the Information Professional officers, Lieutenant Commander Meyer and Lieutenant Commander Pringle.

Lieutenant Commander Sherwood immediately discusses the fact that he was assigned to deploy and maintain a client-server network with which contracting information could be communicated effectively to track the spending and involvement of the Iraqi populace in terms of becoming involved in the development of their indigenous infrastructure.[107] Regarding the client-server network, Lieutenant Commander Sherwood addresses the fact that it became difficult for his him and his agency to effectively distribute the server package to certain different commands because commands did not have the appropriate level of 'buy-in' to share the information necessary.[108] He notes that certain commands would track certain fields of information while others would track a completely different set of fields of information.[109] In his opinion, the non-uniformity of information requirements would make mission accomplishment difficult for his office in terms of effective and efficient mission accomplishment.[110]

The difficulty that he experienced in terms of deploying the client-server network reared its head again in terms of dealing with the information that his office received from different commands. Lieutenant Commander Sherwood stated that in his office's capacity as the responsible agency for the data administration for his client-server network, there were a large number of difficulties dealing with the non-standardization of data being communicated to his office.[111] He stated that personnel would have to perform re-work in communicating to each of the commands contained on the network

[107] Steve Sherwood, 2009.

[108] Ibid.

[109] Ibid.

[110] Ibid.

[111] Ibid..

what data precisely was to be transmitted back to Joint Contingency Command Iraq and Afghanistan via the network.[112] This re-work severely hampered the effectiveness and efficiency of his mission.

Certain bureaucratic issues also became known in Lieutenant Commander Sherwood's interview. He states that while he would be assigned to deploy his network to some areas, after consulting with the Information Technology managers at certain areas they would renege on accepting his network because they did not have the appropriate level of authority to accept the network.[113] The fact that he had to convince the superiors of the Information Technology managers to accept the technology severely limited his operational efficiency.

Lieutenant Commander Sherwood makes an excellent point in his interview regarding the use of the contracts in an area as a metric with which there was an ability to gauge the level of violence by insurgents versus the amount of money sent into an area through contracts. He contends that the Joint Contingency Command Iraq and Afghanistan was able to effectively utilize this metric to a point in order to predict how much more money needed to be spent in terms of contracted work in an area to reduce the level of violence in a certain area.[114] Thus, the failure of certain remote satellite locations to effectively and efficiently provide the needed information had a direct effect on his office's ability to track the level of violence in an area, and had a direct effect on the level of efficiency and effectiveness of his duties.

The interview with Lieutenant Commander Sherwood went a little longer than the other two interviews but contained much more information in terms of effectiveness and efficiency of Information Technology managers and contractor personnel. He was remarkably candid and upfront in terms of communicating his observations and what he

[112] Steve Sherwood, 2009.

[113] Ibid.

[114] Ibid.

saw while he was in theater, and in the end, he seemed an excellent source of information. The information gleaned from his interview was perhaps the most helpful information gleaned for this case study relative to the other two interviews.

4. Similarities and Differences

Each of the interviews contained remarkably insightful accounts of contingency efforts in Iraq. Unfortunately, no information was gleaned regarding the contingency operations in Afghanistan. However, more than enough information was attained regarding Iraq to support the hypothesis that the relationship between contractors and Information Technology managers was strained in the sense that the Information Technology managers could not effectively manage the contracted personnel.

It is worth noting, however, that in addition to similarities between the responses of each of the individuals interviewed, who each possessed unique perspectives, that there were differences in some of the responses of each of the individuals. However, it is remarkable how similar each of the responses of the individuals are when taken into the context that each person comes from a different agency, has a different perspective, and had a different experience in the Iraq contingency.

Regarding effectiveness, there were many different responses. Lieutenant Commander Meyer stated that the most important factors for effectiveness were the fact that, in his opinion, he did not have enough equipment or personnel at his disposal in order to effectively accomplish the mission.[115] He further stated that he was not privy to the particulars of the contract when dealing with contractors – without knowledge of the requirements and responsibilities of the contractors, he was not able to effectively quality assure their work.[116]

Lieutenant Commander Pringle differs from Lieutenant Commander Meyer in that he stated that inadequacies in terms of the ability to train personnel in the area of knowledge management were a major concern in terms of effectiveness.[117]

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[115] Kent Meyer, 2009.

[116] Ibid.

[117] Sam Pringle, 2008.

Lieutenant Commander Sherwood also added that a lack of understanding or concurrence with data requirements led to the receipt of poorly formatted, and at many times, wrong data.[118] This somewhat echoes Lieutenant Commander Meyer in that it presumes that there were either misunderstandings or a lack of knowledge regarding what the requirements were in terms of contracts for data services.

Regarding efficiency, Lieutenant Commander Meyer, Lieutenant Commander Pringle, and Lieutenant Commander Sherwood all concurred in that more bandwidth would be able to enable each of them to do their duties in a more efficient manner. Lieutenant Commander Sherwood also added that several bureaucratic issues contributed to a lack of efficiency in terms of mission accomplishment during his time in Iraq.[119] His point regarding the use of the data gleaned from his client-server network as a metric to gauge the level of violence in specific areas would also lend itself to the presumption that the lack of timely data decreased operational efficiency.

5. Determining Factors

From the information gleaned from each of the interviews taken, it would seem that the hypothesis that the relationship between contractors and Information Technology managers was strained in the sense that the Information Technology managers could not effectively manage the contracted personnel would be proven true.

Utilizing the pattern matching method of analysis described further in depth in the methodology of this case study, a determination can be made that the major factor regarding effectiveness was communicated to be knowledge of contract requirements, while the major factor regarding efficiency was communicated to be a lack of necessary bandwidth. A discussion of each of these factors is important to fully understand their importance in the context of Information Technology management and contractor management.

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[118] Steve Sherwood, 2009.

[119] Ibid.

B. DISCUSSION OF FACTORS

1. Factor of Effectiveness: Knowledge of Contract Requirements

The major factor discovered through the data collection process and the analysis of the data collected through the interviews regarding a factor that affects the effectiveness of Information Technology managers working with defense contractors is the need for Information Technology managers to have a thorough understanding of the requirements of the contract that the contractors have signed and are working under. Without knowledge of what the contractor is legally bound to deliver as an end product, the Information Technology manager is at a disadvantage, particularly when dealing with service contractors.

As previously disclosed in the interviews with Lieutenant Commander Meyer and Lieutenant Commander Sherwood, a lack of understanding what the contractor is responsible for delivering to the military service member can create confusion regarding the unit commander's ability to effectively gauge the contractor's performance. Lacking the ability to effectively understand the nature of all of the services written into the contract between a contractor and the military can sometimes cause the military to miss certain unquantifiable facets of a contract, be it training, support, or evaluation.[120]

Further, the Information Technology manager lacking the ability to effectively understand the specific requirements of the contractor's end product can cause a significant amount of waste in terms of man-hours on the part of both the military service member and the contractor. If the military service member expects the contractor to deliver certain services that may not be stated in the contract and effectively makes operational plans based on the contractor providing such services, then the military unit suffers in that the forces on the ground are forced to compensate for expected services that do not exist.

From the perspective of the contracted labor, this becomes an issue as well if the contracted labor is disconnected from the contractor personnel responsible for negotiating the details of the contract. If the labor is unaware of what services they are specifically

[120] Gregory A. Garrett, CCH, 2007.

responsible for delivering, and in lieu of any authority figure from the contracting agency, there is only a service member expecting services not stated in the contract, then contractor is more liable to perform the tasks as demanded from the service member. This work, in turn, takes contracted labor away from other service contracts in order to perform work that is unaccounted for.

When the military member misunderstands or is unaware of the requirements of the contract between contracted work and the military unit, the effectiveness of the military unit deteriorates.

2. Factor of Efficiency: Lack of Available Bandwidth

In terms of efficiency, the factor identified as having an effect on the efficiency of Information Technology management and contractor management is the level of available bandwidth. In this particular case study, it has been demonstrated through two independent sources that the level of efficiency can be characterized as poor.

The level of available bandwidth is particularly important in the context of Information Technology management.[121] Without the appropriate level of bandwidth, communications efforts, command and control efforts, knowledge management efforts and more cannot be conducted to the maximum level of capability.[122] High levels of bandwidth allow different types of communications capabilities to become possible, such as video tele-conferencing, the internet, and wireless communications. Without bandwidth, the Information Technology manager in today's military is forced to see most of his communications tools become useless. With today's military capability, the Information Technology manager cannot effectively monitor contractor work, especially contracted work having to deal with the provision of desired Information Technology services such as technical support or data storage. Without the ability to facilitate the transfer of data from one point to another, the Information Technology manager cannot quality assure the status of the data stored.

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[121] David S. Alberts, John J. Garstka, Frederick P. Stein, Department of Defense Command and Control Research Program, 2005.

[122] Ibid.

The defense contractor in a contingency environment is also at a disadvantage in terms of the efficiency of his operation with regards to lacking available bandwidth. By its very definition, a contingency is an operation that requires expedited means of procurement in terms of items and services. With this in mind, the defense contractor is immediately placed in a weaker position than he would be were he not operating in a contingency environment. Without the bandwidth that would likely have been available were the operation not a contingency, the contractor must find some means other than what might have been available to them to communicate with the home offices in terms of providing an effective supply chain to the military.

Lack of available bandwidth is not only a factor that affects the efficiency of Information Technology management operations and contractor management operations, but in the context of this case study, the lack of available bandwidth caused the efficiency to be considered low of the mission accomplishment of the Information Technology manager.

C. CONCLUSIONS

Based on the information taken from an analysis of each of the interviews conducted as the data research for this case study, a judgment can be made regarding the following conclusions:

- Management of defense contractors by Information Technology managers in the Iraq contingency can be characterized as lacking;
- Support for Information Technology managers by defense contractors in the Iraq contingency can be characterized as lacking;
- One of the major factors regarding the effectiveness of Information Technology management of defense contractors is a lack of knowledge of contract requirements;
- One of the major factors regarding the efficiency of Information Technology management of defense contracts is a lack of available bandwidth.

From the information gleaned from each of the interviews taken, it would seem that the hypothesis that the relationship between contractors and Information Technology managers was strained in the sense that the Information Technology managers could not

effectively manage the contracted personnel would be proven true. This determination was made utilizing the case study methodology of research, and the pattern matching tactic of judging the data gleaned qualitatively.

VII. AREAS OF FUTURE RESEARCH

A. THESIS SUMMARY

The purpose of this case study is to demonstrate through the use of qualitative research the effectiveness and efficiency of Information Technology management efforts to manage contingency contractors in the Iraq contingency.

To accomplish this goal, a sustentative history of defense contracting, along with a history of the defense contingency, combined with a history of Information Technology and Information Technology management is presented to provide the reader with the appropriate level of context to understand the issue. The histories are then tied together through a brief overview of the need for contingency contracting for Information Technology management assets. Finally, a brief review of the Commission on Army Acquisition and Contract Management in Expeditionary Operations findings regarding Army contracting actions in the Iraq contingency is presented in order to provide relevance for the discussion.

Utilizing this history and the Gansler Report, the following hypothesis is developed regarding the performance of Information Technology managers with regard to contingency contractors:

- The relationship between contingency contractors and Information Technology managers was strained to the extent that it had an effect on the effectiveness and efficiency of Information Technology management efforts and contingency contracting efforts.

To prove his hypothesis, the following research questions are developed:

- How effective and efficient were the efforts of defense contractors in delivering Information Technology assets to the war fighter during the build up phase of military operations during the contingencies in Iraq and Afghanistan?
- How effective and efficient were the efforts of the Information Technology manager in performing the role of the contract manager when necessitated by resources on the ground during the contingencies in Iraq and Afghanistan?

- What factors affected the effectiveness of Information Technology managers operating in a contingency environment when assigned defense contractors to provide services needed for mission accomplishment?
- What factors affected the efficiency of Information Technology managers operating in a contingency environment when assigned defense contractors to provide services needed for mission accomplishment?

To answer these research questions, the case study methodology is presented utilizing the data collection process of the face to face interview as detailed in Dr. Robert K. Yin's book entitled *Case Study Research: Design and Methods: Fourth Edition.*

Utilizing the case study methods communicated in this text, a series of interviews are conducted with personnel with firsthand knowledge and experience of contingency contracting operations with regard to Information Technology management in the Iraq contingency. Utilizing a qualitative research technique communicated in Dr. Yin's book called pattern matching, the hypothesis is proven to be true and a series of conclusions are made regarding the findings of the interviews:

- Management of defense contractors by Information Technology managers in the Iraq contingency can be characterized as lacking;
- Support for Information Technology managers by defense contractors in the Iraq contingency can be characterized as lacking;
- One of the major factors regarding the effectiveness of Information Technology management of defense contractors is a lack of knowledge of contract requirements;
- One of the major factors regarding the efficiency of Information Technology management of defense contracts is a lack of available bandwidth.

B. FUTURE RESEARCH

This qualitative case study provides several different areas of future research in the realms of Information Technology management and contingency contracting management. As the purpose of this case study was to find different factors that might contribute to the effectiveness and efficiency of contingency contracting operations and Information Technology operations, a more in depth, quantitative exploration of each of these factors can provide greater insight to ways to improve performance in these areas.

Different areas of future research include:

1. Understanding Contract Requirements

The understanding of the requirements of the contract that exists between the Information Technology manager and the contingency contractor was identified as the major factor that had a significant effect on the effectiveness of Information Technology efforts and contingency contracting efforts.

Different areas of future research in this area might include more qualitative research regarding the experiences of both Information Technology managers and contingency contractors regarding what they perceive as the level of understanding of the other with regard to the requirements of defense contracts. In addition, quantitative research could be performed regarding the level of the understanding of defense contracts through testing and assessment of commanders in the field of Information Technology units. Finally, an experiment could take place, examining the effects of having personnel who understand the requirements of defense contracts versus having personnel who were not made privy to the requirements of the same contracts and seeing what effect this understanding has on their performance of the mission.

2. Management of Bandwidth in Contingency Operations

The level of bandwidth available to Information Technology managers was found to be the primary factor in terms of affecting the efficiency of Information Technology operations in contingency operations.

While different areas of future research in this area might include more qualitative research regarding the effect of bandwidth on Information Technology management of contingency operations, there already exists a preponderance of evidence to substantiate the effects of having inadequate amounts of bandwidth on the performance of communication services. Further qualitative research might include an exploration of the reasons for a lack of bandwidth in contingency operations, exploring the factors that might contribute to a lack of available bandwidth.

Since efficiency is usually defined as a rate and is more often than not quantifiable, it would be significantly less difficult to perform a quantitative study regarding the effects of bandwidth on Information Technology operations and/or contingency contracting operations. Concrete, quantifiable data regarding levels of bandwidth is not impossible to find due to the fact that bandwidth is a quantity that is measurable and quantifiable. Thus, it would not be difficult to perform a study examining the level of efficiency of certain military units in terms of the accomplishment of a well defined mission given varying levels of available bandwidth.

3. Timeliness of Data Receipt in Contingency Operations

One of the issues identified in the data collection process was the fact that data was not received in a timely manner regarding the oversight of contracting operations in different regions of Iraq throughout the contingency. While this issue was not identified by multiple sources, and thus was not identified as a major lever regarding the level of effectiveness and/or efficiency of contractor management or Information Technology management in contingency operations, it would be worth studying based on the fact that, according to the data collected, a major metric quantifying the level of violence was utilized by examining the amount of money spent on defense contracts in a certain area of Iraq. Data collection also yielded the fact that it became difficult to measure this metric due to the data not being delivered in a timely fashion.

Further study could be performed regarding the level of the efficiency of the timeliness of data receipt in contingency operations. Qualitative research could be performed in terms of examining testimonies of personnel involved with the receipt of large amounts of data as a part of their mission and making a determination regarding the level of effectiveness and efficiency of data transfer.

Further quantitative study could be performed by examining the number of bits and/or bytes transferred over time from satellite contracting commands to their superiors, and tracking this data along with the level of violence in the satellite areas compared to the amount of defense dollars spent.

It would be a worthwhile effort to take part in a study regarding the timeliness of data flow in contingency operations in order to measure the efficiency and effectiveness of mission accomplishment of Information Technology managers and contingency contractors.

4. Phased Based Acquisition Utilizing the Yoder Three Tier Model

Another recommendation made in the data collection for this case study was to implement a phased based acquisition strategy utilizing the Yoder Three Tier Model[123] in order to standardize the requirements for Information Technology contracts. According to the data collection, doing such would save money in terms of defense contracts over the long term by reducing sustainment costs and lowering the amount of risk on the part of the federal government.

Implementing a phased based approach would also give Information Technology managers more standardization in terms of dealing with Information Technology systems in that the standards would be the same from one system to the next, thus decreasing the amount of money and time necessary to maintain the information systems present and decreasing the amount of spare parts necessary to keep on hand in order to maintain each of the systems. Quantitative research could be performed on this topic using an experiment to see how utilizing the Yoder model would affect defense contract management over time.

[123] E. Cory Yoder, 2005.

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VIII. SIGNIFICANT DEFINITIONS

In order to appropriately understand the context presented in each of the interviews conducted, the following defense contracting terms, Information Technology terms, and military abbreviations and organizations are better defined or illuminated.

A. DEFENSE CONTRACTING TERMS AND CONCEPTS

Procurement – The complete action or process of acquiring or obtaining goods or services using any of several authorized means (Administrator, Office of Federal Procurement Policy, Office of Management and Budget, 2005).

Logistics - Planning and executing the movement and support of forces. It includes those aspects of military operations that deal with: a. design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of materiel; b. movement, evacuation, and hospitalization of personnel; c. acquisition or construction, maintenance, operation, and disposition of facilities; and d. acquisition or furnishing of services (Joint Staff, 2001).

Contingency - A situation requiring military operations in response to natural disasters, terrorists, subversives, or as otherwise directed by appropriate authority to protect US interests (Joint Staff, 2001).

Contingency Contract - A legally binding agreement for supplies, services, and construction let by government contracting officers in the operational area as well as other contracts that have a prescribed area of performance within a designated operational area (Joint Staff, 2001).

C**ontingency Contracting** - The process of obtaining goods, services, and construction via contracting means in support of contingency operations. See also contingency; contingency contract (Joint Staff, 2001.)

Contract- (1) A relationship between two parties, such as a buyer and seller, that is defined by an agreement about their respective rights and responsibilities. (2) A

document that describes such an agreement (Administrator, Office of Federal Procurement Policy, Office of Management and Budget, 2005).

Contract Administration - A subset of contracting that includes efforts to ensure that supplies, services, and construction are delivered in accordance with the terms and conditions of the contract (Joint Staff, 2001).

Contracting Officer — The Service member or Department of Defense civilian with the legal authority to enter into, administer, modify, and/or terminate contracts (Joint Staff, 2001).

Warrant – More commonly referred to as Standard Form 1402, the warrant is the written document granting the Contracting Officer purchase authority on behalf of the United States government (Administrator, Office of Federal Procurement Policy, Office of Management and Budget, 2005).

Contracting Officer Representative — A Service member or Department of Defense civilian appointed in writing and trained by a contracting officer, responsible for monitoring contract performance and performing other duties specified by their appointment letter. Also **COR** (Joint Staff, 2001).

Contractor Management — The oversight and integration of contractor personnel and associated equipment providing support to the joint force in a designated operational area (Joint Staff, 2001).

Build Up Phase - The process of attaining prescribed strength of units and prescribed levels of vehicles, equipment, stores, and supplies. Also may be applied to the means of accomplishing this process (Joint Staff, 2001).

Maturity – In reference to contracts, this will take care of the settlement of a contract including both normal maturity and early termination. Release of documents and registration copy of the asset will be done at this stage (Garrett, Gregory A.; CCH, 2007).

Integrated Project Team - Team composed of representatives from appropriate functional disciplines working together to build successful programs, identify and resolve issues, and make sound and timely recommendations to facilitate decision making. There

are three types of IPTs: 1) Overarching IPTs (OIPTs) that focus on strategic guidance, program assessment, and issue resolution; 2) Working-level IPTs (WIPTs) that identify and resolve program issues, determine program status, and seek opportunities for acquisition reform; and, 3) Program-level IPTs (PIPTs) that focus on program execution and may include representatives from both government and after contract award industry (Defense Acquiistion University).

Technical Representative – (COTR) is a business communications liaison between the United States government and a private contractor. He or she ensures that their goals are mutually beneficial. The COTR is normally a federal or state employee who is responsible for recommending authorizing (or denying) actions and expenditures for both standard delivery orders and task orders, and those that fall outside of the normal business practices of its supporting contractors and sub-contractors. Most COTRs have experience in the technical area (i.e., electronics, chemistry, public health, etc.) that is critical to the success of translating government requirements into technical requirements that can be included in government acquisition documents for potential contractor to bid and execute that work. A COTR must be designated by a Contracting Officer (CO). The CO has the actual authority to enter into, administer, and/or terminate contracts and make related determinations and findings. Other terms for COTR include Contracting Officer's Representative (COR) and Project Officer (PO). The terminology may be agency specific (Administrator, Office of Federal Procurement Policy, Office of Management and Budget, 2005).

Program Management - is the process of managing multiple interdependent projects that lead towards an improvement in an organization's performance (Whitten & Bentley, 2005).

GSA - is an independent agency of the United States government, established in 1949 to help manage and support the basic functioning of federal agencies. The GSA supplies products and communications for U.S. government offices, provides transportation and office space to federal employees, and develops government-wide cost-minimizing policies, among other management tasks. Its stated mission is to "help

federal agencies better serve the public by offering, at best value, superior workplaces, expert solutions, acquisition services and management policies." (Joint Staff 2001)

Yoder Three Tier Model - The Yoder three-tier model addresses a significant shortfall in current contingency contracting operation support: integrative planning and execution. The model calls for the cultivation and utilization of senior officers and civilians with sufficient education, joint qualification, multi-discipline Defense Acquisition Workforce Improvement Act (DAWIA) certifications and other professional qualifications to perform at the highest integrative-planning and execution levels. At the highest level, the Integrative Planner and Executor (IPE) is the essential and critical linch-pin allowing for the development of a comprehensive Contingency Contracting Support Plan (CCSP) that integrates contracting with the broader theater objectives in the Operation Plan (OPLAN) (Yoder, 2005).

Vendor - A vendor, or a supplier, is a supply chain management term meaning anyone who provides goods or services to a company. A vendor often manufactures inventorial items, and sells those items to a customer (Garrett, Gregory A.; CCH, 2007).

B. INFORMATION TECHNOLOGY TERMS AND CONCEPTS

Information Technology -- "the study, design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware." IT deals with the use of electronic computers and computer software to convert, store, protect, process, transmit, and securely retrieve information (Information Technology Association of America, 2008).

Information Technology Management- is concerned with exploring and understanding Information Technology as a corporate resource that determines both the strategic and operational capabilities of the firm in designing and developing products and services for maximum customer satisfaction, corporate productivity, profitability and competitiveness (Information Technology Association of America, 2008).

Knowledge Management- comprises a range of practices used in an organization to identify, create, represent, distribute and enable adoption of insights and experiences.

Such insights and experiences comprise knowledge, either embodied in individuals or embedded in organizational processes or practice. An established discipline since 1995, KM includes courses taught in the fields of business administration, information systems, management, and library and information sciences (Information Technology Association of America, 2008).

Command and Control- can be defined as the exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission (Alberts, David S.; Hayes, Richard E.; DoD Command and Control Research Program, 2006).

Enterprise (IT) - is the organizing logic for business processes and IT infrastructure reflecting the integration and standardization requirements of the firm's operating model (Whitten & Bentley, 2005).

System (IT) - refers to a system of persons, data records and activities that process the data and information in an organization, and it includes the organization's manual and automated processes (Whitten & Bentley, 2005).

Client-Server Technology - Client-server describes the relationship between two computer programs in which one program, the client program, makes a service request to another, the server program. Standard networked functions such as email exchange, web access and database access, are based on the client-server model (Bosch, 2000).

Web server - A computer program that is responsible for accepting HTTP requests from clients (user agents such as web browsers), and serving them HTTP responses along with optional data contents, which usually are web pages such as HTML documents and linked objects (images, etc.) (Bosch, 2000).

Proxy Server - a proxy server is a server (a computer system or an application program) that acts as a go-between for requests from clients seeking resources from other servers. A client connects to the proxy server, requesting some service, such as a file,

connection, web page, or other resource, available from a different server. The proxy server evaluates the request according to its filtering rules (Marakas, George M.; Kelley School of Business, Indiana University, 2003).

Network - A network is a collection of terminals, computers, servers, and components which allows for the easy flow of data and use of resources between one another (Marakas, George M.; Kelley School of Business, Indiana University, 2003).

Tacit knowledge (IT) - people are not often aware of the knowledge they possess or how it can be valuable to others. Tacit knowledge is considered more valuable because it provides context for people, places, ideas, and experiences. Effective transfer of tacit knowledge generally requires extensive personal contact and trust (Marakas, George M.; Kelley School of Business, Indiana University, 2003).

Database - is a structured collection of records or data that is stored in a computer system. The structure is achieved by organizing the data according to a database model. The model in most common use today is the relational model. Other models such as the hierarchical model and the network model use a more explicit representation of relationships (Marakas, George M.; Kelley School of Business, Indiana University, 2003).

Microsoft Excel® - consists of a proprietary spreadsheet-application written and distributed by Microsoft for Microsoft Windows and Mac OS X.

Microsoft Sharepoint® - SharePoint Services, a component of Microsoft Windows Server 2003, is a Web-based collaboration tool, which allows information sharing, and document collaboration. SharePoint sites allow teams to work together on documents, tasks, contacts, events, and other information, providing links to the Microsoft Office tools and desktop programs. It is designed to increase individual and team productivity.[124]

Microsoft Access® - is a relational database management system from Microsoft that combines the relational Microsoft Jet Database Engine with a graphical user interface

[124] Definition taken from Naval Postgraduate School website, "IT Knowledgebase: General Questions." (http://www.nps.edu/Technology/KB/browseItems.asp?cat=1).

and software development tools. It is a member of the Microsoft Office suite of applications and is included in the Professional and higher versions for Windows and is also sold separately.

Stakeholder – a person, group, organization, or system who affects or can be affected by an organization's actions (Whitten & Bentley, 2005).

Internet connectivity - allows the user to activate dial-up connections to the Internet via an ISP or VPN (Information Technology Association of America, 2008).

Inmarsat - is an international telecommunications company originally operating as an intergovernmental organization. It provides telephony and data services to users worldwide, via special terminals which communicate to ground stations through twelve geosynchronous telecommunications satellites. Inmarsat's network provides reliable communications services to a range of governments, aid agencies, media outlets and businesses with a need to communicate in remote regions or where there is no reliable terrestrial network.[125]

Broadband - refers to a signaling method that includes or handles a relatively wide range of frequencies, which may be divided into channels or frequency bins.

SIPRNet - (Secret Internet Protocol Router Network) is a system of interconnected computer networks used by the U.S. Department of Defense and the U.S. Department of State to transmit classified information (up to and including information classified SECRET) by packet switching over the TCP/IP protocols in a "completely secure" environment. It also provides services such as hypertext documents and electronic mail. In other words, the SIPRNet is the DoD's classified version of the civilian Internet together with its counterpart, the TOP SECRET and SCI Joint Worldwide Intelligence Communications System, JWICS. The NIPRNET is used to exchange sensitive but unclassified (SBU) information.[126]

[125] Joint Staff, 2001.

[126] Ibid.

Classified Information- sensitive information to which access is restricted by law or regulation to particular classes of people. A formal security clearance is required to handle classified documents or access classified data.[127]

Top Secret - The highest level of classification of material on a national level. Such material would cause "exceptionally grave damage" to national security if publicly available.[128]

Video teleconferencing – (VTC), is a set of interactive telecommunication technologies which allow two or more locations to interact via two-way video and audio transmissions simultaneously (Joint Staff, 2001).

Bandwidth - a rate of data transfer, throughput or bit rate, measured in bits per second (Hayes-Roth, 2003-2006).

Biometric - is the science and technology of measuring and analyzing biological data. In Information Technology, biometrics refers to technologies that measure and analyze human body characteristics, such as fingerprints, eye retinas and irises, voice patterns, facial patterns and hand measurements, for authentication purposes (Hayes-Roth, 2003-2006).

Data administration - the administration of the organization of data, usually as stored in Databases under some Database Management System or alternative systems such as electronic spreadsheets (Marakas, George M.; Kelley School of Business, Indiana University, 2003).

Network administration - is a modern profession responsible for the maintenance of computer hardware and software that comprises a computer network. This normally includes the deployment, configuration, maintenance and monitoring of active network equipment (Joint Staff, 2001).

Portal - Website that serves as a gateway or a main entry point ('cyber door') on the internet to a specific field-of-interest or an industry. A portal provides at least four

[127] Joint Staff, 2001.

[128] Ibid.

essential services: (1) search engine(s), (2) email, (3) links to other related sites, and (4) personalized content. It may also provide facilities such as chat, members list, free downloads, etc. Portals such as AOL, MSN, Netcenter, and Yahoo, earn their revenue from membership fees and/or by selling advertising space on their web pages.[129]

Functionality - In Information Technology, functionality (from Latin *functio* meaning "to perform") is the sum or any aspect of what a product, such as a software application or computing device, can do for a user. A product's functionality is used by marketers to identify product features and enables a user to have a set of capabilities. Functionality may or may not be easy to use.[130]

Normalize(database) - is a systematic way of ensuring that a database structure is suitable for general-purpose querying and free of certain undesirable characteristics—insertion, update, and deletion anomalies—that could lead to a loss of data integrity. (Information Technology Association of America)

Fields (database) - In computer science, data that has several parts can be divided into fields. For example, a computer may represent today's date as three distinct fields: the day, the month and the year. Programming languages usually have a record data type to represent composite data types as a series of fields.[131]

Cells(database) - is one grouping within a table. Cells are grouped horizontally (rows of cells) and vertically (columns of cells). Usually information on the top header of a table and side header will "meet" in the middle at a particular cell with information regarding the two headers it is collinear with.[132]

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[129] Definition retrieved from BusinessDictionary.com, "Portal: Definition." (http://www.businessdictionary.com/definition/portal.html), .March 2, 2008.

[130] Definition retrieved from SearchSoftwareQuality.com, "What is functionality? A definition from Whatis.com." (http://searchsoa.techtarget.com/sDefinition/0,,sid26_gci335477,00.html#) March 2, 2008.

[131] Information Technology Association of America.

[132] Information Technology Association of America, 2008.

SQL (Structured Query Language) - is a database computer language designed for the retrieval and management of data in relational database management systems (RDBMS), database schema creation and modification, and database object access control management (Information Technology Association of America, 2008).

Thin Client - is a client computer or client software in client-server architecture networks which depends primarily on the central server for processing activities, and mainly focuses on conveying input and output between the user and the remote server. In contrast, a thick or fat client does as much processing as possible and passes only data for communications and storage to the server (Gorton, 2006).

V-band (frequency) - used for high capacity terrestrial millimeter wave communications systems. In the United States, the Federal Communications Commission has allocated frequency at 60 GHz for unlicensed point-to-point fixed wireless systems. These systems are primarily used for high capacity, short distance (less than 1 mile) communications.

Certification (e.g. Microsoft certification) - refers to the confirmation of certain characteristics of an object, person, or organization. This confirmation is often, but not always, provided by some form of external review, education, or assessment. Certifications can differ within a profession by the level or specific area of expertise they refer to. For example, in IT Industry there are different certifications available for Software Tester, Project Manager, and Developer.

Interoperability - is a property referring to the ability of diverse systems and organizations to work together (inter-operate). The term is often used in a technical systems engineering sense, or alternatively in a broad sense, taking into account social, political, and organizational factors that impact system to system performance (Hayes-Roth, 2003-2006).

C. MILITARY DESIGNATIONS AND ABBREVIATIONS

ORHA (Office of Reconstruction and Humanitarian Assistance) - The Office of Reconstruction and Humanitarian Assistance is charged with establishing links with the United Nations specialized agencies and with non-governmental organizations that will play a role in post-war Iraq. It will reach out also to the counterpart offices in the governments of coalition countries, and, in coordination with the President's Special Envoy to the Free Iraqis, to the various Free Iraqi groups.

NGO (Nongovernmental Organization) - are groups which work independently of government or business, and are commonly referred to as NGOs or Third Sector Organizations.

Operations Officer – In the context of this case study, the focus of the Operations Officer is on operations management, which means he or she is responsible for the development, design, operation, and improvement of the systems that create and deliver the products and services.

SES (Senior Executive Service) - is a paygrade in the civil service of the United States federal government, somewhat analogous to the ranks of general or admiral in the U.S. armed forces.

DCAA (Defense Contract Audit Agency) - is responsible for performing all contract audits for the Department of Defense, and providing accounting and financial advisory services regarding contracts and subcontracts to all DoD Components responsible for procurement and contract administration.

DCMA (Defense Contract Management Agency) - is to provide Contract Administration Services to the Department of Defense Acquisition Enterprise and its partners to ensure delivery of quality products and services to the warfighter; on time and on cost.

Intel (Intelligence) community - is an umbrella term used to describe a property of the mind that encompasses many related abilities, such as the capacities to reason, to plan, to solve problems, to think abstractly, to comprehend ideas, to use language, and to learn.

Green zone - is the common name for the International Zone of Iraq— a 10-square-kilometer (3.8-square-mile) area in central Baghdad that was the center of the Coalition Provisional Authority and remains the center of the international presence in the city. Its official name beginning under the Iraqi Interim Government is the International Zone, though Green Zone remains the most commonly used term.

Navy Judge Advocate General Corps. - also known as the "JAG Corps" or "JAG" is the legal arm of the United States Navy. Today the corps consists of a worldwide organization of more than 730 Judge Advocates, 30 limited duty officers (law), 500 enlisted members and nearly 275 civilian personnel, serving under the direction of the Judge Advocate General of the Navy.

MNF-I - Multinational Forces, Iraq - is a military command, led by the United States, that is fighting the Iraq War against Iraqi insurgents or resistants. Multi-National Force - Iraq replaced the previous force, Combined Joint Task Force 7, on May 15, 2004. General Ray Odierno serves as Commanding General.

MNC-I – Multi-National Corps – Iraq - was "stood-up" on May 15, 2004, due concerns that had existed for some period of time, that the Combined Joint Task Force 7 headquarters, was not sufficient to handle the range of military operations in Iraq, including peace support, civil military operations, and at the same time conduct strategic engagement such as talking to the sheiks and talking to the political authorities. Those are typically functions that are performed by two different headquarters. They conduct offensive operations to defeat remaining non-compliant forces and neutralize destabilizing influences in Iraq in order to create a secure environment.

BTA (Business Transformation Agency) - is an organization of the United States Department of Defense (DoD) responsible for guiding the Department's business operations modernization. Founded in October 2005, the agency fosters business

operations support for the American war fighter and seeks to provide accountability to the American taxpayer by systematically improving DoD's business processes, ERP systems and investment governance. To accomplish the goal of providing consistency, consolidation and coordination across the Department of Defense, the BTA produced the Enterprise Transition Plan (ETP) -- an integrated and executable roadmap that observes the standards laid out in the Business Enterprise Architecture (BEA). The ETP and the BEA enable the Department to transform business operations to achieve improved warfighter support while enabling financial accountability across the Department of Defense.

FOB (Forward Operating Base) - is any secured forward position that is used to support tactical operations. A FOB may or may not contain an airfield, hospital, or other facilities. The base may be used for an extended period of time. FOB's are traditionally supported by main operating bases that are required to provide backup support to them. A FOB also reduces reaction time and increases time on task to forces operating from it.

Task Order - contracts that permit government stocks of specific items to be maintained at minimum levels and allow direct shipments to the users of products or services. They also permit great flexibility in both quantities and delivery scheduling and the ability of buyers to order supplies and services only after specific requirements for them materialize. Perhaps most significantly, task order contracts limit the Government's obligation to the minimum quantity specified in the contract. Task order contracts are used by buyers who cannot predetermine the precise quantities of supplies or services they will require during the contract period when it is inadvisable for them to commit to any more than a minimum quantity.

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APPENDIX A: PRE-INTERVIEW SOLICITATION

The purpose of this solicitation, and subsequent interview, is to gather information for a master's degree thesis exploring the nature of the use of Information Technology assets during the Build Up phase of the current military contingency operations in Iraq and Afghanistan.

You are invited to lend your point of view based on your experiences in either Afghanistan or Iraq in the capacity of either a contracting officer, an information warfare practitioner, or information professional in order to more effectively understand the nature of the actions that were taken in preparation for the current contingency operations.

Your participation in this study will enable the identification of what methods might be employed to make the contracting process better for future military Contingency Contracting Officers, Information Professionals and Information Warfare practitioners.

The information gathered in this survey and the subsequent interviews are solely for the use of thesis research. At no time will the information gathered regarding specific participants or agencies be released to any outside agencies. While the analysis of the data and relevant comments to support the analysis will be published in the thesis, at no time will names or identifying information be used or released without prior consent.

The benefit of participating in this study is that you will be helping to address a relevant, important issue concerning United States military contracting. There is no other compensation for your participation in this research.

Thank you for your contribution to this important research.

LT Derek Randall, USN
Student, Information Technology Management
Graduate School of Operations and Information Sciences
Naval Postgraduate School (NPS) Monterey, California

APPENDIX B: INTERVIEW SCRIPT

The information solicited in this interview is intended to describe the context of your participation in the military contingencies that are currently occurring in Afghanistan and Iraq, to give the interviewer (myself) some sort of background information regarding you and your relevance to the operation, and to act as a framework for the interview process.

I reserve the right to ask any follow up questions that I feel may be necessary in order to get a full understanding of the context of your response.

The interview will be recorded and the results will be used in thesis research. Following the publication of the thesis, the data will be destroyed.

All of the answers are voluntary; if at any time you feel uncomfortable answering any of the questions, please feel free to decline to respond.

An outline of the questions which will be asked is included for your edification.

Please state your name and rank:

What is your designator / community?

Were you assigned to forces operating in the contingencies in either Afghanistan or Iraq?

Where were you assigned, Afghanistan or Iraq?

At what time were you assigned to Afghanistan/Iraq? (Month/Yr to Month/Yr)

In what capacity (billet) was your assignment?

Please describe your duties in the billet you listed above.

Did your assignment include anything to do with defense contracting?

If so, please describe how you were involved.

Are you a warranted contracting officer?

Did you authorize any contracts while you were assigned to Afghanistan/Iraq?

If so, please give a brief overview of what type of contracts you were involved in, when, and for approximately how much money.

Would you consider these contracts to be part of the build up phase?

Did you utilize any IT assets to perform contract management?

If so, how?

Did you consider the IT assets adequate to perform contract management?

If not, why?

Are there any specific IT assets you wish you had that you didn't?

If so, what?

Are there any specific IT capabilities you wish you had that you didn't?

If so, what?

During your time in Afghanistan/Iraq, did you utilize any IT assets for missions other than contracting?

If so, what type of IT assets did you utilize in Afghanistan/Iraq?

How did you use these assets to accomplish your job?

Did you consider the IT assets that you used adequate for your duties?

Are there any specific IT capabilities you wish you had that you didn't?

Are there any specific assets you wish you could have had that you didn't?

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